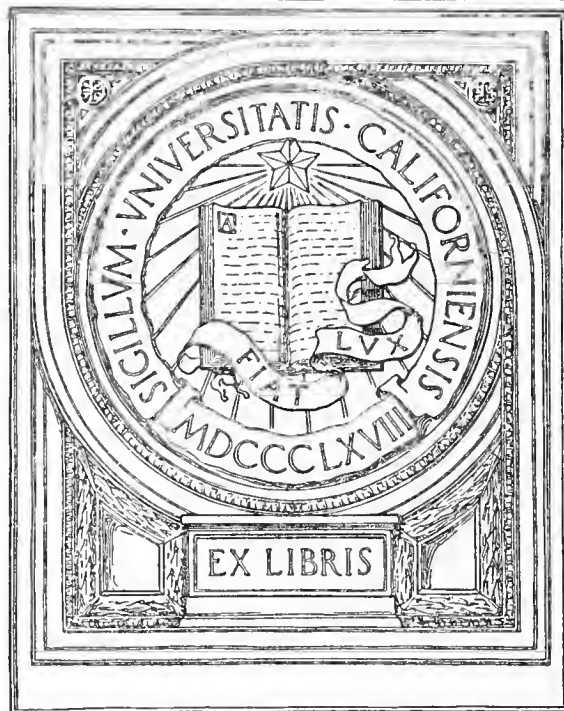




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# THE JOURNAL OF THE ARKANSAS MEDICAL SOCIETY

JUNE 1958

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VOL. 55 No. 1

FORT SMITH, ARKANSAS



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# EFFECTIVE AGAINST A WIDE RANGE OF CHLOROMYCETIN

## COMBATS MOST CLINICALLY IMPORTANT PATHOGENS

*In vitro* studies continue to show that a wide variety of gram-positive and gram-negative microorganisms are highly sensitive to CHLOROMYCETIN (chloramphenicol, Parke-Davis).<sup>1-9</sup>

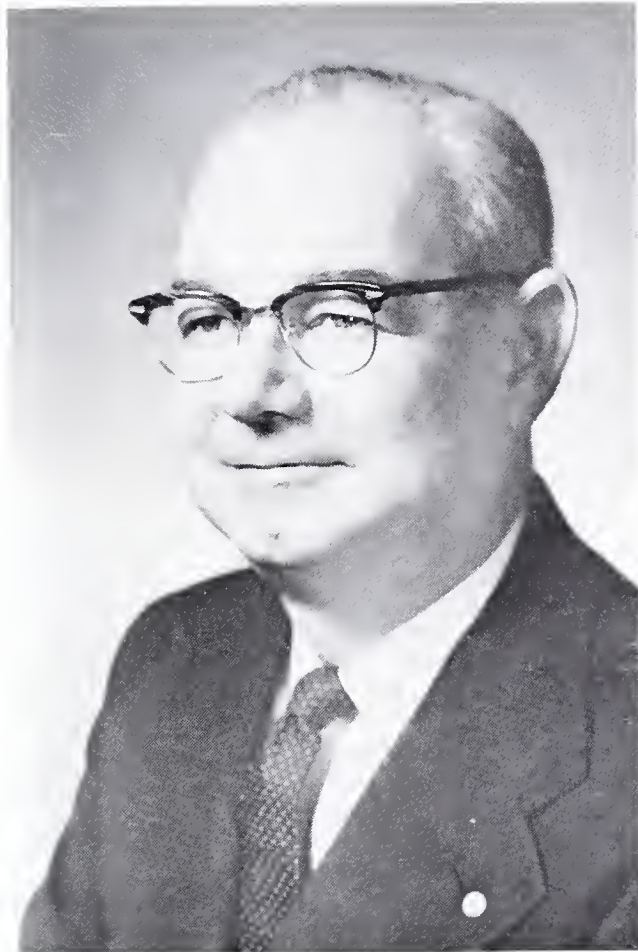
Clinically, CHLOROMYCETIN "...has proved to be a particularly valuable agent in urinary tract infections," where it is often effective against microorganisms resistant to other antibiotics.<sup>10</sup> Among other infections against which CHLOROMYCETIN has produced excellent response are severe staphylococcal wound infections,<sup>5</sup> *Hemophilus influenzae*<sup>11</sup> and *Hemophilus pertussis*<sup>12</sup> infections, and dysenteries caused by salmonellae and by shigellae.<sup>12</sup>

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

**REFERENCES:** (1) Roy, T. E.; Collins, A. M.; Craig, G., & Duncan, I. B. R.: *Canad. M.A.J.* 77:844 (Nov. 1) 1957. (2) Schneierson, S. S.: *J. Mt. Sinai Hosp.* 25:52 (Jan.-Feb.) 1958. (3) Hasenclever, H. E.: *J. Iowa M. Soc.* 47:136, 1957. (4) Rhoads, P. S.: *Postgrad. Med.* 21:563, 1957. (5) Caswell, H. T., and others: *Surg. Gynec. & Obst.* 106:1, 1958. (6) Josephson, J. E., & Butler, R. W.: *Canad. M.A.J.* 77:567 (Sept. 15) 1957. (7) Petersdorf, R. G.; Curtin, J. A., & Bennett, I. L., Jr.: *Arch. Int. Med.* 100:927, 1957. (8) Waishren, B. A., & Strelitzer, C. L.: *Arch. Int. Med.* 101:397, 1958. (9) Holloway, W. J., & Scott, E. G.: *Delaware M. J.* 29:159, 1957. (10) Murphy, J. J., & Rattner, W. H.: *J.A.M.A.* 166:616 (Feb. 8) 1958. (11) Neter, E., & Hodges, H. L.: *Pediatrics* 20:362, 1957. (12) Woolington, S. S.; Adler, S. J., & Bower, A. G., in Welch, H., & Martí-Ibañez, E.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 365.



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LOUIS K. HUNDLEY

Pine Bluff

PRESIDENT

Arkansas Medical Society  
1958-1959



# The JOURNAL

## OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

JUNE, 1958

Number 1

### *82nd Annual Session*

## Arkansas Medical Society

### PRESIDENT'S ADDRESS

#### FIRST GENERAL SESSION

T. DUEL BROWN, Little Rock

Ladies, gentlemen and distinguished guests, I am especially pleased to welcome each of you to the 82nd Annual Session of the Arkansas Medical Society. By allowing me to serve as president of the Arkansas Medical Society, you have conferred upon me the greatest honor of my life.

It is with mixed emotions that I arise to address you for the last time as your president. It has been a pleasure to serve as president, and now I am somewhat sad to think of leaving this high office which has given me an opportunity for service and self-expression.

It has been of great interest to note, that every advance made in medicine or public health in Arkansas, has been conceived and pushed through by our medical organization. This involved both money and efforts from the doctors of our Medical Society.

The first mention of the establishment of a medical school in Arkansas was made at a meeting of the Arkansas Medical Society in October 1873. The school was finally established in 1879 and graduated Doctor Pinson in 1880.

The school has continued under one name or another since that time. In 1911, it was turned over to the State of Arkansas, free and without any strings attached,

and has been a State Medical School since that date.

In 1878, there was a great epidemic of yellow fever in Eastern Arkansas. There was no law to help control its spread. The doctors, through their medical society, set up road blocks and examined everyone coming from the eastern part of the State, and turned back those who showed symptoms of the fever.

This action is generally credited with saving a great many lives. In August of 1879, the Governor of Arkansas, William R. Miller, issued a proclamation recognizing the work of the doctors. He emphasized the fact, that they had controlled the epidemic of yellow fever without the benefit of laws.

The Legislature of 1881, established the State Board of Health, which has operated since that time, with its members being nominated by the State Medical Society.

In 1886, as a result of the efforts of the State Medical Society, a state sanatorium for the insane was established.

Many efforts were made in the 1880's, to pass a law which would set up the qualifications of persons, wishing to practice medicine in Arkansas. Finally, in 1903, legislation was passed establishing the



## PRESIDENT'S ADDRESS

State Medical Board. The passage of this law, was one of the tools used to eliminate drummer doctors, many of whom had accumulated in Hot Springs.

In 1909, due to the efforts of the State Medical Society, the state sanatorium for tuberculosis was established.

In 1929, the Basic Science Law was passed. This has been the keystone in assuring the public, that persons practicing medicine in Arkansas must have, at least, a scientific education.

In more recent years, the Arkansas Medical Society has continued to improve medical knowledge, and provide better medical care for the public. It is responsible for establishing the State Cancer Commission, by which indigent cancer patients are cared for without charge by the physicians. Tumor clinics are regularly held for the discovery of cancer. A continuing program of public education is carried on, by the county and state medical societies, with

no thought of payment to the doctors.

The Blue Cross-Blue Shield voluntary health insurance plan in Arkansas, was established by the Arkansas Medical Society, in cooperation with the Farm Bureau, and the Arkansas Hospital Association. This plan provides low cost health insurance for the public.

Recent developments within the Medical Society have been:

(1) The establishment of grievance committees, to hear the complaints of patients against physicians.

(2) The provision of money for numerous student loans funds, to assist medical students through school, and

(3) The provision for doctors to keep abreast with the advance of science, through their county and state medical society meetings.

Many of the younger physicians of today show a lack of interest in medical organizations. Efforts should be made on the



INAUGURATION OF PRESIDENT

Outgoing President Brown (left) presents the gavel to Louis K. Hundley after administering the oath of office.



## PRESIDENT'S ADDRESS

part of the medical school, to give our students a sufficient background as to the importance of medical organizations—local, state and national. If you think you are going to be happy and prosperous, by sitting back and letting the government take care of you—look at the American Indian!

Social and economic medicine are gaining importance in present day life. We cannot afford to concentrate our attention solely on the scientific aspects of medicine.

Doctors are outstanding citizens in their communities, and the public expects some leadership from them in social and economic affairs. Specifically, a series of lectures on socio-economic subjects by leading physicians and lay citizens, should be given to the senior medical students each year.

Of all the voluntary and governmental health agencies, confronting the average physician during his daily practice, the Public Health Department is the one with which he probably has the most contact, and is the one that he appears to know the least about.

In April, 1956, *The Journal of the American Medical Association* published a report on "The Physician and the Public Health Department" written by Dr. Edward R. Pinckney of Napa, California.

The report said that physician and public health department relationships, where effective, provide a valuable service to the

private physician in his daily practice. There are many ways the practicing physician may utilize the health department, as an aid in diagnosis, as a means of communicable disease control, and as a way of educating his patients to know when, why, and how to obtain competent medical care.

In order to have a health department in his community, that is an asset to the medical profession, the physician, both as an individual and as part of his local medical society, must advise, constructively criticize, and actively participate in community public health programs.

I would like to see more interest, on the part of Arkansas physicians in their national organization—The American Medical Association. It is a democratic organization, where the voice of any member may be heard in the reference committees, during the two annual meetings of the House of Delegates. The policies of American medicine are made by the House of Delegates, which is composed of one delegate for each 1,000 doctors. Any ordinary member of the American Medical Association, can request to speak before any reference committee.

Arkansas has not taken full advantage of its opportunity in the national organization. The organization is now 110 years old, and Arkansas has never had a member on the Board of Trustees. This opportuni-



PAST PRESIDENT'S BREAKFAST

Left to right: J. A. Bargen, guest; Fount Richardson, R. B. Robins, Euclid Smith, W. H. Mock, W. R. Brooksher, George B. Fletcher, H. T. Smith.



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ty may be presented to us at the American Medical Association convention in San Francisco next month.

There is a vacancy on the nine member Board of Trustees for this area of the country. It appears that Arkansas has a good opportunity this year, to have a man named to the Board.

It is urged that as many members of the Arkansas Medical Society as possible, go to San Francisco in June for this meeting. A special breakfast for Arkansas members, will be held at the American Medical Association convention, Monday morning, June 23, at the Palace Hotel. All Arkansas physicians in attendance, are invited and expected to attend the breakfast. In addition to attending the greatest medical show on earth, which is true of any annual meeting of the American Medical Association, this year many physicians are taking their families to San Francisco as their annual vacation.

At each session of Congress there are always several hundred pieces of legislation introduced, which deal in some way with the practice of medicine. At the present Congress, the most important legislation concerning the medical profession, is

the Forand Bill HR-9467 which proposes to socialize medical and hospital care, for the 13 million beneficiaries of Social Security.

Representative Forand would accomplish this by amending the Social Security Act. He would raise the taxable wage base, from \$4,200 to \$6,000 and the tax rate for employer and employees by  $\frac{1}{2}$  per cent. Supposedly, these additional Social Security taxes would finance his scheme.

The Forand Bill is just as dangerous, vicious and infeasible as the radical schemes of compulsory national health insurance proposed years ago by the leftwing trio of Murray-Wagner-Dingell. The Forand Bill is a dire threat to the preservation of quality medical care and private practice. It would mean that almost the entire working population would have their taxes increased to pay for the medical and hospital care of a small percentage of the population—the 13 million beneficiaries of Social Security. The bill is now pending in the House Ways and Means Committee.

We must all realize, that this is the backdoor approach to what we have been fighting for a number of years, namely, social-



OFFICERS OF THE ARKANSAS MEDICAL SOCIETY—1958-1959

Back row, left to right: H. W. Thomas, Councilor; Fount Richardson, Past President; C. A. Archer, Jr., Vice Councilor; John Wood, Councilor; Calvin Simmons, Vice Councilor; W. R. Brooksher, Past President and Secretary Emeritus; Robert D. Jones, Councilor; Henry Hearnberger, Vice Councilor; T. D. Brown, Past President; Perry Dalton, Councilor; Hugh Edwards, Councilor; Ross Fowler, Councilor.

Front row: Stanley Applegate, Vice Councilor; R. B. Robins, Past President; Euclid M. Smith, Past President; C. Lewis Hyatt, Speaker of the House; Louis K. Hundley, President; James M. Kolb, president-elect; Randolph Ellis, First Vice President; Elvin Shuffield, Secretary; Joe Verser, Chairman of the Council; H. King Wade, Jr., Councilor; Julian Fairley, Vice Councilor.



## PRESIDENT'S ADDRESS

ized medicine. If this legislation should pass, we can surely predict, that at the next session of Congress, a bill would be introduced to give the same benefits to all American citizens, and then, we would have complete governmental medicine.

The doctors of Arkansas should realize and appreciate the fact, that members of Congress from Arkansas hold very important positions today. Congressman Oren Harris is chairman of the Interstate and Foreign Commerce Committee—a committee which considers all health legislation.

Congressman Wilbur D. Mills is now chairman of the House Ways and Means Committee in the United States House of Representatives. He is in an important position, and ranks next to the speaker himself in power and influence. Mr. Mills wants to know how the doctors of Arkansas feel, about being placed on the Social Security rolls. Social Security has been “liberalized” for four straight election years. Obviously, Congress considers Social Security to be an important political “pork-barrel” and a powerful means of buying votes.

In the Senate, we have Senator John L. McClellan, who is chairman of the Government Operations Committee, which is another powerful committee in the Congress.

In 1946, the Arkansas Medical Society established a Professional Relations Committee, with the chief function of investigating complaints against any physician by a dissatisfied patient, another physician, or an insurance company. It is my opinion that this committee should remain alert at all times, and be informed by members of our society as to any grievances, or complaints. An active arbitration type of committee would improve public relations and would minimize, or probably eliminate, many of the complaints which have been going to the courts for settlement. A poor settlement is always better than a good lawsuit.

After serving as your president for the past year, it gives me a great deal of satisfaction to know, that my successor is a man upon whom we can depend for constructive leadership. Our incoming president is looking forward to the year ahead of him. His eyes are fixed upon the future.

I am particularly grateful, for the cooperation which I have received from the past presidents, officers and committees—and I do mean all committees.

Randolph Ellis and his General Program Committee worked hard to prepare an excellent program for this meeting. The Arrangements Committee for the annual ses-



FIFTY YEAR CLUB BREAKFAST

Left to right: L. D. Reagan, T. D. Brown, Mr. Peter Deisch, C. W. Dixon, J. H. McCurry, Jabez Jackson, E. J. Byrd, President of Club, L. K. Hundley, L. H. McDaniel, B. C. Middleton, N. E. Fraser, E. M. Gray, O. J. T. Johnston, and T. E. Rhine.



## PRESIDENT'S ADDRESS



The Speakers' table at the Annual Banquet. Left to right: Mrs. Brown, T. D. Brown, Mr. Chester Lauck, Jean Gladden (standing), Mrs. Woods, John P. Woods, Mrs. Kolb, James M. Kolb.



## PRESIDENT'S INAUGURAL BANQUET

Hotel Arlington Dining Room May 6th, 1958. It was the largest banquet ever held by the Society. It was necessary to seat 70 people in another dining room.

## PRESIDENT'S ADDRESS

sion have done a good job, but were handicapped due to such a limitation of space.

Sam Jameson and his Insurance Committee, have done a lot of work in accumulating documented evidence, to show how the public was not adequately protected by insurance, and was losing many thousands of dollars each year, by misrepresentations of various insurance policies and insurance salesmen. Only approximately 20% of the insurance companies have been found at fault. With the co-operation of Governor Faubus, our Insurance Commissioner Mr. Harvey Combs, his department and some of the insurance companies, much progress has been made toward getting more protection for the public, for the insurance companies, for the hospitals, and for the doctors.

All of this cooperation was an inspiration to me, and I hope that I will be able

to serve our new president as loyally, and as satisfactorily, as those who have joined with me in carrying on the affairs of the Arkansas Medical Society. It was this co-operation and friendly spirit of helpfulness, that made possible any success, which may be credited to my term of office.

To the new officers, I would like to say, don't have your hats altered to fit your new promotions, you will find that the work, responsibilities and the cares of your office, will soon cause your heads to shrink to normal size.

I wish the best of luck and success to all the new officers. I want to thank all of you, for the opportunity of serving as president of the Arkansas Medical Society, and I shall always consider this as my highest honor.





# PROCEEDINGS

## *82nd Annual Session*

### ARKANSAS MEDICAL SOCIETY

Arlington Hotel, Hot Springs, Arkansas

May 5th, 6th and 7th, 1958

#### FIRST GENERAL SESSION

Monday, May 5th, 9:00 A. M.

Ballroom, Arlington Hotel

The meeting was called to order by President T. Duel Brown at 9:00 a. m. The invocation was given by Fred J. Gray, Jr., of Little Rock. President Brown addressed the Society as reported on page one. The scientific session, with C. R. Ellis presiding, proceeded as follows:

"Prenatal Care, Delivery, and Postnatal Care of the RH Negative Patient," Jack Pritchard, Dallas

"Precautions in Medical Radiology," Raymond R. Lanier, Denver

"Advances in Surgery of Congenital Heart Disease," Dwight C. McGoon, Rochester, Minn.

"Functional Nature of Thyroid Tumors and Their Clinical Significance," Brown Dobyns, Cleveland, Ohio

#### SECOND GENERAL SESSION

Monday, May 5th, 12:50 P. M.

Ballroom, Arlington Hotel

Major E. Smith presided, presenting the scientific movie "William Harvey and the Circulation of the Blood" at 12:50 p. m. and the following scientific program:

"Hematuria," Horace V. Munger, Lincoln, Nebraska

"Mutual Problems of Medical Practice and Public Health," Leroy E. Burney, Surgeon General, United States Public Health Service, Washington, D. C.

"Fractures and Fracture Dislocations of the Wrist," Hugh M. A. Smith, Jr., Memphis

"Neurosurgical Problems of the General Practitioner," Robert Watson, Little Rock

#### FIRST SESSION

##### HOUSE OF DELEGATES

Monday Afternoon, May 5th

Speaker Clyde Rodgers called the meeting to order in the Ballroom of the Arlington Hotel at 4:00 p. m.

Mr. Schaefer called the roll of delegates.

Roy Millard, chairman of the Credentials Committee, reported that credentials of the delegates present had been examined and found correct and that a quorum was present.

The following delegates and members seated as delegates by action of the House were present:

ARKANSAS, R. H. Whitehead, Sr.; ASHLEY, E. C. Gresham; BAXTER, E. M. Gray; BOONE, Wm. P. Barron; BRADLEY, George F. Wynne; CHICOT, Byron Z. Binns; CLARK, P. R. Anderson; CONWAY, Harold E. Hyder; CRAIGHEAD-POINSETT, Bascom P. Raney, Joe Verser; CROSS-ST. FRANCIS, K. E. Beaton; DESHA, H. T. Smith; DREW, C. Lewis Hyatt; FRANKLIN, Wm. C. Hensley; GARLAND, Louis McFarland; GRANT, Miles Kelly; GREENE-CLAY, Jack Cash; HOT SPRING, C. R. Ellis; INDEPENDENCE, J. J. Monfort; JACKSON, Jabez Jackson; JEFFERSON, H. L. Wineland, J. R. Pierce, Jr.; JOHNSON, Robert H. Manley; LA-FAYETTE, Charles Cross; LAWRENCE, J. B. Elders; LEE, Dwight Gray; LINCOLN, Charles B. Dixon; LITTLE RIVER, N. W. Peacock, Jr.; MISSISSIPPI, Eldon Fairley; MONROE, Ed. D. McKnight; NEVADA, Glenn G. Hairston; OUACHITA, J. W. Hawley; PHILLIPS, Alfred Berger;

## PROCEEDINGS

POPE-YELL, Roy I. Millard, Walter P. Harris; PULASKI, James G. Stuckey, John Downs, Thomas Johnston, William Orr, Hoyt Choate, J. A. Harrell, Gordon Oates, James Headstream, D. B. Cheairs, Julian Foster, Calvin Dillaha; SALINE, James C. Bethel; SEBASTIAN, Wright Hawkins, Art B. Martin, A. S. Koenig; UNION, George Burton; WASHINGTON, C. D. Buckley, WOODRUFF, Fay B. Millwee.

The following Councilors were present as members of the House of Delegates:

SECOND DISTRICT, Hugh Edwards, EIGHTH DISTRICT, Elvin Shuffield, NINTH DISTRICT, Ross Fowler; TENTH DISTRICT, James M. Kolb.

The following honor guests were presented to the House of Delegates:

Mrs. J. W. Kennedy, President, Woman's Auxiliary to the Arkansas Medical Society

Mrs. Paul Craig, Wyomissing, Pennsylvania, President, Woman's Auxiliary to the American Medical Association.

Upon the motion of Hundley and Millard the House adopted as correct the minutes of the 81st Annual Session as published in the June 1957 issue of the Journal of the Arkansas Medical Society.

Chairman of the Council James M. Kolb read the following report of the Council:

During the year 1957-58, the Council conducted business for the Arkansas Medical Society as follows:

On April 25th, 1957, the Council met for organizational purposes immediately following adjournment of the final general session and elected James M. Kolb as chairman and Alfred Kahn as editor of the Journal.

The Council met on June 23rd, 1957, and transacted business as follows:

1. Approved the actions of the Executive Committee in:

A. Accepting Journal advertising from the American Collectors Association.

B. Extending the Medicare contract to March 31, 1958.

2. Authorized Society officers to sign letters of introduction for an insurance firm whose professional overhead insurance policy was endorsed by the 1957 House of Delegates.

3. Extended the VA contract sixty days to allow time for renegotiation and appointed the Executive Committee as the team to negotiate a new contract.

4. In regard to the 1958 Annual Session, the Council:

A. Voted to request all specialty sections to confine their programs to Tuesday afternoon;

B. Directed that the Monday night party be on a dutch treat basis and should not be a responsibility of the host society;

C. Voted to install the incoming president at the Tuesday night banquet;

D. Decided to limit exhibitors giving away food or drink to those products which they sell.

5. Approved the Glaucoma Program proposed by the ophthalmological section of the Arkansas Medical Society.

6. Appointed the Executive Committee to meet with the State Board of Medical Examiners to discuss possible actions to eliminate reported wide-spread cheating at basic science examinations.

7. Adopted a resolution offering the Society's assistance to the Arkansas Legislative Council in any investigation of the Medical Center which the Legislative Council might see fit to make.

8. Directed the Executive Secretary to write the Executive Director of the Medicare Program that his reply regarding qualifying all licensed hospitals in Arkansas was unsatisfactory and should be a subject of negotiation when the contract was renegotiated.

9. Voted a monthly expense allowance and a trip to one national meeting per year for Miss Richmond of the headquarters office.

10. Voted to present the name of R. B. Robins to the AMA House of Delegates as a candidate for the AMA Board of Trustees and directed that money for a campaign be raised by voluntary individual subscriptions by members of the Society.

11. Heard a discussion by Chairman Kolb on the possibility of levying an assessment on the members or voting money from the Medical Society treasury for the American Medical Education Foundation.

The Council met on Sunday, October 6th, and transacted the following business:

1. Approved Executive Committee actions of July 28th as follows:

A. Voted to send Jack W. Kennedy to the National Conference of Physicians and schools in Highland Park, Illinois.

B. Instructed the Executive Secretary to inform the VA that the fees submitted by them dated July 1, 1957, were acceptable for a new contract.

C. Voted to request the Chairman of the Public Relations Committee, Thomas G. Johnston, to attend an AMA Public Relations meeting in Chicago.

D. Appointed a committee to study the constitution of the Arkansas Medical Society and report to the Council.

E. Discussed preliminary plans for electing R. B. Robins to the AMA Board of Trustees with the chairman of the campaign committee.

F. Directed that, in the future, monies from Society contributions to the hostess county auxiliary which are not used during the auxiliary convention be returned to the Arkansas Medical Society.



## PROCEEDINGS

G. Voted an increase in salary and a monthly expense account to the executive secretary.

2. Established a Medicare fee for Septectomy Submucous Resection of \$130.00.

3. Voted to submit a final overhead rate for administration of the Medicare Program of \$2.50 per claim.

4. Directed that a notice of the new VA fee schedule be published in the Journal.

5. Voted, in order to guarantee that welfare patients receive only the best care, to oppose participation of optometrists in the remedial eye service.

6. Regarding the transfer of Cancer Commission funds to the Welfare Department, the Council voted to request that Cancer Commission funds be restored to the Commission and that our legislative Committee be instructed to introduce legislation to that effect, and to inform the Governor and the Welfare Department of cases of medical indigents who do not meet welfare standards and recommend that the Welfare Department liberalize its rules to include these cases or that the Governor furnish funds to the Commission from his emergency funds to cover border-line cases.

7. Accepted and approved the audit report of the State Medical Examining Board, including the report of the Physical Therapist Board.

8. Voted to approve Society cooperation with the Sears-Roebuck Foundation in their efforts to assist rural communities building medical facilities.

9. Appointed a committee on Auto Safety, pending approval of the House of Delegates.

10. Elected Hugh Edwards as the Society's nominee for a position on the State Medical Board left vacant by the death of M. L. Harris.

11. Voted to go on record as opposing any liberalization of the Blue Cross-Blue Shield policy to include payment of all branches of the healing arts for services rendered by practitioners other than by doctors of medicine and doctors of dentistry.

12. Recommended that the Public Relations Department of the University publicize information on the problems created by the refusal of Little Rock and Pulaski County to abide by the new law establishing patient quotas at the Medical Center.

13. Approved the arrangements for commercial exhibits for the 1958 Annual Session.

14. Voted to have the Society headquarters send a letter to all members of the Society for the Nurses Association.

15. Elected L. H. McDaniel as Arkansas' candidate for general practitioner of the year.

The Council met on November 24th at the Hotel Marion in Little Rock and transacted business as follows:

1. Voted to continue the present method of handling special reports under the Medicare program through the district professional relations committees.

2. Examined the original claims forms for all of the Medicare claims for the month of September.

3. Voted to give the Executive Committee authority to sign or refuse to sign a new Medicare contract.

4. Decided against authorizing a grant of funds to the Nurses Association for a nurse survey.

5. Authorized Mr. Warren, Dr. Verser, and Dr. Hundley to attend Minnesota's Legislative Council hearings on full licensure for osteopaths.

6. Referred a problem of medical ethics in the Greene-Clay County Medical Society to the Council for the first district.

7. Voted to absorb the cost of two mailings for the Jeff Banks Memorial Student Aid Fund in the amount of \$147.09.

8. Requested the Chairman to appoint a committee composed of three members of the Legislative Committee to include Joe Shuffield and two members of the Council to review possibilities for a new legislative attorney and report to the Council.

The Council met on January 19th, 1958, at the Hotel Marion and transacted the following business:

1. Approved the purchase of additional office equipment necessitated by the addition of employees to handle the expanded Medicare program.

2. Authorized travel to Chicago of Mr. Warren and, if necessary, Mr. Schaefer for the purpose of obtaining certain information.

3. Received with regret the resignation of J. J. Monfort as secretary of the Society and unanimously elected W. R. Brooksher secretary to complete the unexpired term.

4. Referred to the Legislative Committee a proposal for a new law giving priority to medical school applicants who would agree to practice in rural areas of the state.

5. Voted to reiterate its standing policy of leaving the operation of the Journal to the editor and editorial board as long as budget requirements are met.

6. Voted to hold the banquet for the Annual Session in the Arlington Hotel and request the local committee on arrangements to arrange a dance at the Belvedere Country Club following the banquet.

7. Voted an expression of confidence and appreciation for the work of the Annual Session program chairman and reiterated its policy that the general program chairman is in complete charge of the program and other arrangements for the annual meeting and that the State Society has no responsibility for specialty section programs or expenses.

8. Voted to endorse the Medical Center's plan for construction and operation of a research wing.

9. Directed the Executive Secretary to compose and forward a resolution of regret to the widow of R. C. Hooper.

10. Ruled that the third vice president, Major E. Smith, should succeed to the second vice presidency left vacant by Dr. Hooper's death and that an election to fill the vacancy in the third vice presidency be held at the next council meeting.

## PROCEEDINGS

11. To support the Miller County Medical Society's position against statements made in a Texarkana paper regarding the number of polio vaccinations given, the secretary was instructed to refer the county medical society to the minutes of the Council dated October 16th, 1955.

12. Decided to send the chairman of the Insurance Committee to a Dallas AMA meeting on prepayment medical and hospital service.

13. Authorized Joe Verser, who volunteered to go at his own expense, to attend the Tennessee Medical Society meeting in Nashville.

The Council met February 16th at the Hotel Marion in Little Rock and conducted business as follows:

1. Reviewed the proposed new Medicare Manual of rules and procedures and recommended prices for new procedures and set policy for the negotiating team with regard to anticipated government demands for reduced fees.

2. Authorized up to \$250.00 for the expenses of two University of Arkansas School of Medicine delegates to the Student AMA meeting in Chicago.

3. Elected B. P. Raney of Jonesboro to the office of third vice president.

4. Requested each councilor to bring as a guest at a future designated meeting, one young physician not presently active in the State Society.

5. Voted to purchase another announcement in the Medical School annual, THE CADUCEUS.

6. Agreed to a Medicare fee of \$10.00 for the first call and routine history of the newborn.

7. Gave approval to the State Board of Health to conduct a specific study of cancer deaths as suggested by the Chairman of the Committee on Cancer Control.

8. Tabled a motion to transfer funds in the Brooksher Student Loan Fund to the Auxiliary.

The Council met on Sunday night, May 4th, at 8:00 p.m. and transacted the following business:

1. Received a letter from the president of the Woman's Auxiliary to the Arkansas Medical Society expressing appreciation for the cooperation and support of the Society during 1957 and 1958.

2. Received a report that an increase in advertising rates for the Journal had been agreed to by national advertisers.

3. Referred an AMA request that the Society establish a Committee on Aging to the Committee on Constitutional Revision.

4. Received and discussed a resolution by the Conway County Medical Society regarding a liability suit for unauthorized surgery. The case was referred back to the county medical society for whatever action they deemed desirable. The State Society's legal counsel was directed to continue his interest in the case and to work with the Legislative Committee for an legislation indicated by this type of suit.

5. Voted to request the insurance committee of the Society to investigate the feasibility of the Society on becoming its own insurer for liability insurance.

6. Voted, in order to acquaint members all over the State with the work of the Society, to meet with county medical societies in all sections of the State at their invitation.

7. Discussed a bill for luncheon presented by the insurance committee and accepted W. R. Brooksher's offer to pay it.

8. Referred to the resolution committee a resolution to memorialize the American Medical Association that the Arkansas Medical Society and its members still oppose inclusion in compulsory social security.

9. Decided to again poll the Society membership as to whether or not they wish to be included in Social Security.

10. Requested the Committee on Medical Education to attempt to see that the Medical School include in its curriculum courses explaining the advantages of the private practice of medicine and the dangers of participating in Social Security.

11. Approved renewal of Part A of the VA contract.

12. Accepted and approved the report of the Budget Committee for 1958 as published in the March 1958 Journal of the Arkansas Medical Society.

13. Heard a request from the Pediatric section that expenses of their meeting be paid by the Arkansas Medical Society. The Council reiterated its established policy that all specialty sections should finance their own meetings.

14. Requested the program committee to draw up a statement of modus operandi of the Annual Session of the Arkansas Medical Society and the relation of the specialty sections to it for use at future meetings.

15. Elected Charles Reid of Pine Bluff to serve on the Board of Trustees of Blue Cross-Blue Shield.

16. Directed the Executive Secretary to cash \$6,500 of matured treasury bonds and reinvest the money in government bonds.

17. Authorized the transfer of \$10,000 from the Medicare Fund back to the general funds of the Society.

The Council met Monday morning, May 5th, at 7:30 p.m. with Surgeon General Leroy Burney and Horace Munger as guests.

The Council transacted the following business:

1. Approved and referred to the House of Delegates the following requests for life and affiliate memberships:

**Life Memberships:**

D. L. Mask

W. H. Bollinger

C. A. Campbell

**Affiliate Memberships:**

**(Retired)**

Eugene Stevenson

Homer Higgins

Chas. F. Bloom

Joseph DeLaney



## PROCEEDINGS

W. A. Fowler  
Frank Gordon  
L. H. Lanier  
M. S. Craig  
L. T. Evans  
Paul Jeffery  
R. L. Dawson  
H. K. Carrington  
G. F. McLeod  
H. M. Kitchens  
A. V. Adams  
J. T. Wood  
H. C. Dorsey

### (Military Service)

W. H. Handley, Jr.  
J. Harry Hayes, Jr.

### (Physical Disability)

Frank Norwood

### (Residency)

G. K. Patton  
J. R. Brown  
Paul L. Stuck  
Wm. C. Threlkeld  
Anthony DePalma  
Chas. Tarkington  
O. W. Davenport  
Orval E. Riggs  
George Mitchell

2. Heard a report from Louis K. Hundley regarding the renegotiation of the Medicare contract and the present status of the program.

3. Received a resolution (printed elsewhere in this Journal) from the Texas Medical Association recommending the discontinuance of the Medicare Program and referred to the resolution committee a motion that:

(A) the Medical Society is in general agreement with the Texas Resolution;

(B) the Society go on record with Medicare officials and Congress against further extension of the Medicare type programs; and

(C) that Congress be requested to plan to discontinue the program in the future.

4. Deferred discussion of the Society's audit report pending the appearance of the Society's certified public accountant to answer questions regarding it.

Upon the motion of Kolb and Verser, the Report was referred to reference committee number one.

Published committee reports were referred to either Reference Committee Number one (J. H. Burge, Lake Village, Chairman; J. F. Kelsey, Fort Smith, Gordon Oates, Little Rock) or to Reference Committee Number Two (Calvin R. Simmons, Pine Bluff, Chairman; C. Lewis Hyatt, Monticello, John Walter Jones, Texarkana).

The Report of the Public Relations Committee was read by Thomas G. Johnston.

The report was assigned to reference committee number two.

A Supplementary Report of the Committee on Medical Education was read by C. R. Ellis in the absence of the Chairman, Jack W. Kennedy. The supplementary report was assigned to reference committee number two.

Upon the motion of Elvin Shuffield and W. H. Mock the House went into Executive Session and heard the report of the Medical Legislation Committee read by Chairman Elvin Shuffield. The report was assigned to reference committee number one.

By motion of Millard and Fowler, the Executive Session adjourned and the press and visitors were invited to return to the general meeting of the House of Delegates.

R. B. Robins read three resolutions as follows in the absence of the Ouachita County Delegate, Dr. James W. Hawley:

(a) Resolution complimenting Dr. Jameson and Committee on Insurance

(b) Resolution on Forand Bill

(c) Resolution reaffirming opposition to Compulsory inclusion of physicians under Social Security.

Resolution A and C were referred to reference committee number one and Resolution B was referred to reference committee number two.

Gordon Oates, Pulaski County Delegate, presented a resolution opposing the Joint Committee on Accreditation of Hospital's ruling on automatic stop order of drugs. The resolution was referred to reference committee number one.

Secretary Brooksher presented for second reading the following amendments previously presented at the 1957 Annual Session:

Chapter VII, Section 1, 8, c, of the By-Laws. Add the words "not more than twelve" after the word "each", so that it shall read: "The Committees shall consist of not less than six members each, and not more than twelve, with each president appointing one-third of the members of each committee for a three-year period" and adding: "Providing that sub-committees shall consist of three or six members, with each president appointing one-third of the membership". Upon the motion of Brooksher and Thomas, the House adopted the amendment.

James Stuckey, Pulaski County Delegate, spoke briefly regarding the problems of some drug companies not being incor-



## PROCEEDINGS

porated in the State of Arkansas and moved, second by Berger, that a committee be appointed to study the problem and report back to the House.

Elvin Shuffield introduced Mr. Aubrey Gates of the Task Force of the American Medical Association, who spoke briefly bringing the greetings of that organization.

Speaker Rodgers announced that vacancies would occur on the Arkansas State Board of Health from the First and Second Congressional Districts and designated a time and place of meeting for members from that district to select a nominee to fill the vacancies.

Delegates from the various councilor districts held meetings on the floor and selected the nominating committee as follows: First District, B. P. Raney; Second District, J. J. Monfort; Third District, K. E. Beaton; Fourth District, H. T. Smith; Fifth District, George Burton, Sixth District, R. C. Dickinson; Seventh District, C. R. Ellis, Eighth District, Hoyt Choate, Ninth District, Stanley Applegate, Tenth District, Robert H. Manley.

By motion of J. Shuffield and Hoyt Choate, the House adjourned at 5:45 p.m.

### MONDAY EVENING

**MAY 5th**

A Dutch Treat Buffet Dinner and Party was held for all members at the Majestic Lodge on Lake Hamilton. Three hundred and twenty-eight members and guests enjoyed an evening of informal fun.

### THIRD GENERAL SESSION

**Tuesday, May 6th, 8:20 A.M.**

**Main Ballroom, Arlington Hotel**

The meeting in the Ballroom of the Arlington Hotel opened at 8:20 a.m. Tuesday with the showing of the movie "Red River of Life". The General Session was called to order by John Olson. Invocation was by Harold B. Wright of Waldron. The scientific program followed:

"The Diagnosis of Gynecological Tumors", Felix Rutledge, Houston, Texas  
"The Treatment of Painful Terminal Illness", Milton H. Erickson, Phoenix, Arizona

"The Psychological Factors in Illness", Leo H. Bartemeier, Baltimore, Maryland

### MEMORIAL SERVICE

**Tuesday, May 6th, 11:30 a.m.**

**Main Ballroom, Arlington Hotel**

T. Duel Brown, president, presided at a Memorial Service honoring members who had passed away during the year. The invocation was given by Mrs. T. Duel Brown, Little Rock. President Brown read the names of the deceased members:

Jeff Banks, Little Rock, August 27, 1957  
Roy F. Baskett, Texarkana, May 19, 1957  
L. F. Barrier, Little Rock, January 9, 1958  
E. G. Burt, Magnolia, April 30, 1957  
Harvis T. Capel, Pine Bluff, October 26, 1957  
James H. Chestnutt, Hot Springs, June 8, 1957  
E. F. Ellis, Fayetteville, August 7, 1957  
M. L. Harris, Newport, July 23, 1957  
Guy Hodges, Rogers, June 8, 1957  
R. C. Hooper, Jonesboro, January 15, 1958  
R. H. Huntington, Fayetteville, January 28, 1958  
E. B. Jones, Hartford, December 4, 1957  
F. H. Jones, Piggott, October 9, 1957  
O. K. Judd, Little Rock, December 28, 1957  
Samuel P. Junkin, Little Rock, August 22, 1957  
A. A. Little, Texarkana, April 30th, 1958  
O. C. Melson, Little Rock, April 30, 1957  
C. H. McKnight, Brinkley, August 12, 1957  
Ralph E. McLochlin, Little Rock, November 8, 1957  
J. L. Rushing, Chidester, April 20, 1957  
James I. Scarborough, Little Rock, November 29, 1957  
J. E. M. Taylor, Sparkman, July 3, 1957  
W. E. Turner, Jr., Piggott, July 9, 1957

Mrs. J. W. Kennedy, President of the Woman's Auxiliary, read the names of the deceased auxiliary members:

Mrs. Vernon MacCameron, Arkansas City, Arkansas  
Mrs. W. A. Nowlin, Roland, Arkansas

The Memorial Address was given by Dr. Henry G. Hollenberg of Little Rock:

### MEMORIAL ADDRESS

If there is any part of the Lord's plan which is crystal clear to mortal minds, it is simply that we are here on Earth for a short period of years. The mysteries of life are many. We do not know from whence we came. We have only hope and religious faith as to our final destination. Certainly we have no idea why some Supreme Being made this Universe and why he put us on Earth. Our finite minds cannot cope with the concept of endless time or endless space. It is difficult to see why He has chosen one child to leave the world in early years and another to live on to old age. It is beyond our comprehension to under-

## PROCEEDINGS

stand why he has selected this individual for fame and glory and that one for an humble role. We cannot see why a person of fine character and great wisdom must leave us while others apparently less deserving live on and on. Particularly is it hard to understand and to take with good grace the loss of persons dear to us. The separation of devoted husbands and wives seems particularly cruel though there must be some reason.

All of us in our profession are part of this plan and must humbly and bravely bow to it. We are dedicated to our feeble attempts to postpone the hour of passage of our fellow men and to ease their way. But we must resign ourselves to the loss of each and every one of our patients and each and every one of our friends.

Every year we meet at this time to revere those who have gone ahead during the past twelve months. It is the last roll call and it is an honorable roll call where all our names will one day appear. This Memorial Service affords us a brief opportunity to think with affection upon these fine men and women who have labored well and whose good deeds are without number. It affords us the opportunity to pray to God to give them rest and to forgive them for shortcomings which they would be the first to admit. And it furnishes us the occasion to express our thanks for the years we have had them and to offer our profound sympathy to their relatives and closest friends. Here we can speak with pride of their accomplishments. We can say without embarrassment that we loved them dearly. We have complete faith that they have gone to a better life where in good time we will all join them.

Benediction was pronounced by Mrs. T. Duel Brown.

### TUESDAY AFTERNOON

MAY 6th

The following specialty section programs were held on Tuesday afternoon, May 6th.

The Pediatric group met at 12:00 noon at the Velda Rose Motel with Drs. Fred Taylor, Theodore C. Panos, Albert E. Hensel, Vida H. Gordon, and Clarence Webb as speakers.

A surgery meeting was held at the Majestic Hotel beginning at 12:30 p.m. Dwight C. McGoon and Brown Dobyns were guest speakers.

The Arkansas Psychiatric Society met at the Velda Rose Motel at 1:30 p.m. with guest speaker Leo Bartemeier.

The Society of Obstetricians and Gynecologists held a scientific meeting in the Banquet Room of the Arlington Hotel beginning at 12:30 with Dr. Wm. D. Thornton of Texarkana as moderator. Speakers

were Jack Pritchard, Wm. B. Harrell, Robert Chappell, Felix Rutledge.

Urologists met at 12:30 in the Fountain Room of the Arlington Hotel for a luncheon and scientific session.

The Section on E.E.N.T. met in the Montague Room of the Arlington with Dr. James L. Smith of Little Rock as chairman. Speakers were Francis E. LeJeune, Harold Beasley, and E. C. Moulton, Jr.

### TUESDAY EVENING

MAY 6th

The Annual Banquet, held Tuesday evening, May 6th, was attended by 471 members and guests, by far the largest number ever to attend the event.

Dr. T. Duel Brown, presided. Shortly after 7:00 p.m., he introduced Mr. Chester Lauck, Executive Assistant, Continental Oil Company, who acted as master of ceremonies for the entire evening. Mr. Lauck enlivened the program with his famous characterization of "Lum" of the radio team "Lum and Abner". His humorous stories and his serious tribute to the medical profession were most warmly received.

Gaston Hebert, Chairman of the Arrangements for the Golf Tournament, awarded the golf prizes. Dr. Thomas G. Johnston and Dr. Guy Farris, both of Little Rock, tied for low net and Dr. King Wade, Jr. of Hot Springs won low gross. Dr. Allie E. Andrews of Paragould received a prize for the highest score.

Excellent dinner music was furnished by the hotel orchestra during the entire evening.

After making a brief talk reviewing his year as president of the Society, Dr. Brown requested the past presidents to come to the platform where he introduced them to the assembly. He then delegated Drs. W. R. Brooksher and H. T. Smith to escort President-Elect Louis K. Hundley to the platform. Dr. Brown administered the oath of office and presented the gavel to Dr. Hundley, who thanked the Society for electing him and expressed his determination to do his utmost in behalf of the medical profession during his tenure of office.

The program was concluded by the singing of several numbers by one hundred Hot Springs boys and girls known as the Troubadours and led by Miss Dora Jane



## PROCEEDINGS

Ledgerwood of that city. The selection of the numbers, as well as their rendition, were particularly pleasing to all those present.

At the conclusion of the banquet, members and guests drove to the Belvedere Country Club where the orchestra played to an overflow crowd.

### FOURTH GENERAL SESSION

Wednesday, May 7th

#### Main Ballroom, Arlington Hotel

John P. Wood presided at the Fourth General Session which began at 9:00 a.m. on Wednesday, May 7th, with invocation by Joe W. Reid of Arkadelphia.

The scientific program was as follows:  
"The Pathology of Chronic Ulcerative Colitis",  
Malcolm Dockerty, Rochester, Minn.  
"Problems in the Management of Ulcerative Colitis",  
J. A. Barga, Rochester, Minn.  
There followed a Clinical Pathological Conference moderated by Drs. Dockerty and Barga.

### FINAL SESSION, HOUSE OF DELEGATES

Wednesday Afternoon

2:00 p.m., Ballroom, Arlington Hotel

Speaker Rodgers called the House of Delegates to order. The following members and members seated as delegates by action of the House were present:

ARKANSAS, R. H. Whitehead, Sr.; BAXTER, E. M. Gray; BOONE, Hugh M. Fogo; BRADLEY, George F. Wynne; CHICOT, J. H. Burge; CONWAY, Harold E. Hyder; CRAIGHEAD-POINSETT, Horace C. Barnett, Bascom P. Raney, Charles G. Swingle; CROSS-ST. FRANCIS, K. E. Beaton; DESHA, H. T. Smith; DREW, C. Lewis Hyatt; FAULKNER, C. A. Archer, Jr.; FRANKLIN, Wm. C. Hensley; GARLAND, Louis McFarland, Euclid Smith; GREENE-CLAY, Jack Cash; HEMPSTEAD, J. W. Branch; HOT SPRING, C. R. Ellis; INDEPENDENCE, J. J. Monfort; JEFFERSON, H. L. Wine-land, J. R. Pierce, Jr.; JOHNSON, Robert H. Manley; LINCOLN, Charles B. Dixon; LITTLE RIVER, N. W. Peacock, Jr.; MILLER, Karlton Kemp; MISSISSIPPI, Eldon Fairley; MONROE, J. P. Williams, Jr.; OUACHITA, J. W. Hawley; POLK, L. K. Williams; POPE-YELL, Charles F. Wilkins, Jr.; PULASKI, John Downs, Thomas

Johnston, William Orr, Hoyt Choate, J. A. Harrell, Gordon Oates, Edgar Easley, William L. Steele, Julian Foster, Robert Jones; SCOTT, James A. Jenkins; SEBASTIAN, Wright Hawkins, Art B. Martin, W. R. Brooksher; UNION, George Burton; WASHINGTON, Stanley Applegate, Fount Richardson; WHITE, Claude Barnett; WOODRUFF, Fay B. Millwee.

The following councilors were present as members of the House of Delegates: First District, Joe Verser; Second District, Hugh Edwards; Fourth District, H. W. Thomas; Fifth District, Perry Dalton; Sixth District, John P. Wood; Seventh District, H. King Wade, Jr.; Eighth District, Elvin Shuffield; Ninth District, Ross Fowler, Tenth District, James M. Kolb.

Hoyt Choate presented the following report for the nominating committee.

#### FOR PRESIDENT-ELECT:

James M. Kolb, Clarksville

#### FIRST VICE PRESIDENT:

C. R. Ellis, Malvern

#### SECOND VICE PRESIDENT:

Robert Atkinson, Hot Springs

#### THIRD VICE PRESIDENT:

Paul Ledbetter, Jonesboro

#### SECRETARY:

Elvin Shuffield, Little Rock

#### TREASURER:

Gordon Oates, Little Rock

#### SPEAKER, HOUSE OF DELEGATES:

C. Lewis Hyatt, Monticello

#### VICE SPEAKER, HOUSE OF DELEGATES:

J. P. Price, Jr., Monticello

#### COUNCILORS—

Second District: Hugh Edwards,  
Searcy

Fourth District: H. W. Thomas,  
Dermott

Sixth District: John P. Wood, Mena

Eighth District: Robert D. Jones,  
Little Rock

Tenth District: L. A. Whittaker, Jr.,  
Fort Smith

#### VICE COUNCILORS—

Second District: Charles Archer,  
Conway

Fourth District: Calvin R. Simmons,  
Pine Bluff

Sixth District: William B. Harrell,  
Texarkana

## PROCEEDINGS

Eighth District: Bill Dave Stewart,  
Little Rock

Tenth District: C. C. Long, Ozark

DELEGATE TO THE AMERICAN  
MEDICAL ASSOCIATION—

James M. Kolb, Clarksville

ALTERNATE DELEGATE TO THE  
AMERICAN MEDICAL ASSOCIATION—

Fount Richardson, Fayetteville

POSITION OF MEMBER-AT-LARGE,  
ARKANSAS STATE MEDICAL  
BOARD—

Jeff Baggett, Prairie Grove

Upon motion of Easley and Fairley the report was approved and accepted by the House.

Nominations were requested from the floor. Perry Dalton nominated Sam Jameson of El Dorado as treasurer. There were no other nominations from the floor.

Speaker Rodgers read a letter from Joseph Norton requesting that his name be withdrawn as a nominee for president-elect. Upon motion of Brooksher, seconded by Shuffield, the House so voted.

By motion of Hundley, seconded by Raney, the House unanimously elected James M. Kolb as president-elect.

Upon written ballot, Sam Jameson was elected treasurer.

Brooksher moved, seconded by Raney, that all other officers be elected by acclamation. It was so voted.

The Report of Reference Committee Number One was read by Chairman J. H. Burge:

### REPORT OF REFERENCE COMMITTEE NUMBER ONE

J. H. BURGE, Lake Village, Chairman;  
GORDON P. OATES, Little Rock;  
J. F. KELSEY, Fort Smith

Reference Committee Number One met at the Arlington Hotel Tuesday, May 6th, and considered the resolutions and committee reports submitted to it. We recommend approval of the following committee reports:

1. Committee on Rural Health
2. Committee on Cancer Control
3. Committee on Public Health
4. Sub-Committee on Maternal and Child Welfare, but recommend that one member of this committee be an obstetrician-gynecologist, one member a pediatrician, and the third member be appointed at large. Further, the President of the Arkansas Obstetrical-Gynecological Society should be the member representing obstetrics and gynecology.

5. Committee on Industrial Health
6. Sub-Committee on Tuberculosis
7. Sub-Committee on Mental Health
8. Committee on Liaison with the State Board of Health
9. Polio Advisory Sub-Committee
10. Committee on Medical Education
11. Committee on Hospitals
12. Liaison Committee with Blue Cross-Blue Shield
13. Sub-Committee on State Health and Medical Resources for Civil Defense

We recommend that the suggestion of the Industrial Health Committee that a course on Industrial Medicine be established at the University of Arkansas Medical School be endorsed by the Society and that the Committee on Medical Education be instructed to take this matter to the Medical School.

We recommend approval of the following resolutions:

- (A) "The Forand Bill", introduced by Dr. Hawley, Ouachita County Delegate
- (B) "Social Security", introduced by Dr. Hawley, Ouachita County Delegate
- (C) Resolution regarding the Bulletin issued by the Joint Committee on Accreditation of Hospitals regarding the automatic stop of drugs, introduced by Pulaski County

This Committee considered the report of the Council as submitted by Dr. James M. Kolb, Chairman, and recommends its approval. We recommend that the report of the Council be published in the Journal along with other committee reports annually, provided there is no objection by the Council. We realize that certain of the late meetings cannot be published but if all those reports of meetings prior to the March issue of the Journal were published, it would save a considerable amount of time in the House of Delegates and a considerable amount of time for the reference committee at the Annual Session.

Upon motion of J. H. Burge, seconded by B. P. Raney, the report was adopted by the House.

Report of Reference Committee Number Two was read by Chairman Calvin R. Simmons:

### REPORT OF REFERENCE COMMITTEE NUMBER TWO

CALVIN R. SIMMONS, Pine Bluff, Chairman;  
C. LEWIS HYATT, Monticello  
J. W. JONES, Texarkana

The Second Reference Committee met May 5th and again May 7th in the Hotel Arlington, Hot Springs, Arkansas, and reviewed and approved the actions of the following committees:

Report of Sub-Committee on Liaison with the Nursing Profession

Report of the Advisory Committee to the Auxiliary (including report of Auxiliary president)



## PROCEEDINGS

Report of Advisory Committee to Arkansas State Medical Assistants Society  
Committee on Senior Medical Day  
Committee on Veterans Administration Affairs  
Committee on Arrangements for Annual Session  
Delegate to AMA  
Arkansas State Advisory Committee to the Selective Service System  
The Arkansas State Cancer Commission  
Report of the Arkansas State Medical Board  
Arkansas State Board of Health  
Report of First Councilor District Professional Relations Committee  
Report of Second Councilor District Professional Relations Committee  
Report of Third Councilor District Professional Relations Committee  
Report of Fourth Councilor District Professional Relations Committee  
Report of Sixth Councilor District Professional Relations Committee  
Report of Seventh Councilor District Professional Relations Committee  
Report of Eighth Councilor District Professional Relations Committee  
Report of Tenth Councilor District Professional Relations Committee  
Executive Secretary's Report  
Report of the Budget Committee  
Report of Insurance Committee  
The American Medical Education Foundation  
Public Relations Committee of the Arkansas Medical Society  
Medical Education Committee of the Arkansas Medical Society

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In addition the Reference Committee studied the Resolution submitted by Dr. James Hawley, delegate from Ouachita County, and approved this Resolution as written, commending the work of Dr. Sam Jameson and the Insurance Committee.

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The Reference Committee recommends that the detailed report of the Public Relations Committee be referred in its entirety to the Council of the Medical Society for action at its July Meeting. In addition the Committee recommends that the present Public Relations Committee be notified to attend this Meeting of the Council to give their viewpoints for the changes recommended in the structure of their Committee. The Reference Committee commends the work and thought put into the report of your Public Relations Committee.

Upon the motion of Calvin R. Simmons, seconded by R. B. Robins, the House adopted the report.

James M. Kolb read the supplementary report of the Council as follows:

## SUPPLEMENTARY REPORT OF THE COUNCIL

The Council met Tuesday morning at 7:30 a.m. and transacted the following business:

1. Noted the absence of Dr. S. J. Allbright and upon learning of his illness ordered a telegram of good wishes sent to him.
2. Directed that the money in the Bill Brooksher fund be turned over to the Auxiliary to be known as the Brooksher Student Loan Fund to be used to assist medical technicians in getting their education.
3. Received and acknowledged a letter from the president of the Arkansas Chapter, Student American Medical Association thanking the Medical Society for giving financial assistance in sending Arkansas senior medical students to the Student American Medical Association meeting.
4. Directed Dr. King Wade, Jr., to draw up his proposal to increase the number of councilors to two from each district and submit it to the House of Delegates for its consideration.
5. Heard Mr. Aubrey Gates of the American Medical Association speak on matters of legislation.
6. Heard Dr. John Herron, State Health Officer, discuss the administration and limitations of the Hill-Burton Fund in Arkansas. The Council voted to commend Dr. Herron for the equitable and efficient manner in which he administers this program.
7. Heard Dr. Crawley speak on physical fitness and school health programs and referred his request to the Constitution Revision Committee.

The Council met on Wednesday morning, May 7th, and transacted the following business:

1. Received a telegram from Dr. S. J. Allbright expressing his appreciation for the Society's good wishes and stating that this was the first annual meeting which he had missed in 42 years.
2. Heard Mr. E. B. Sparks, partner in Douglas Walker and Company, Certified Public Accountants, the Society's auditing firm, explain the audit reports of the Society and heard his recommendation that the Society's system of bookkeeping continue as in the past. The Council voted to approve and accept the audit reports as submitted.
3. Louis K. Hundley invited the Council to meet in Pine Bluff in July and it was decided to leave the decision on this invitation up to the new Council to be elected.
4. Adopted the following resolutions:
  - (A) Teaching of Medical Ethics and the Art of Medicine in the University of Arkansas School of Medicine
  - (B) Resolution supporting the Texas Medical Association's stand favoring discontinuance of the present Medicare plan for Military Dependents.

## PROCEEDINGS

- (C) Resolution instructing our delegates to aid the American Medical Association in its opposition to the inclusion of physicians in compulsory social security.

(D) Resolution of Thanks

5. Heard Mr. John Rowland, Executive Director of Blue Cross-Blue Shield discuss matters of mutual interest.

6. Voted to invite the medical society's representatives on the Board of Trustees of the Blue Cross-Blue Shield to attend the July Council meeting.

7. Directed that a message of condolence be sent to Mrs. R. C. Dickinson on the serious illness of her sister.

Upon motion of Kolb, seconded by McFarland, the House approved and accepted the report of the Council.

Mr. Schaefer read the following resolutions and all were adopted by the House of Delegates:

- (1) Resolution on Medicare
- (2) Resolution on Teaching of Medical Ethics at the University of Arkansas School of Medicine
- (3) Resolution Opposing Compulsory inclusion of physicians in Social Security
- (4) Resolution of Appreciation

Upon announcement of the death of a member of the House of Delegates, Dr. Fred J. Gray, Jr., of Pulaski County, James M. Kolb moved that a letter of sympathy and condolence be sent to the family of the deceased physician.

At the suggestion of Hundley the House stood for a silent moment of prayer for Dr. Gray.

W. R. Brooksher read the report of his Committee on Constitutional Revision and moved adoption of proposed amendments, second by Burton.

Upon motion of King Wade, seconded by Dalton, the House approved the nominees submitted for the second congressional district vacancy on the Arkansas State Board of Health. Verser moved approval of nominee for first congressional district vacancy on the Arkansas State Board of Health, seconded by Shuffield.

Louis K. Hundley invited the Society to meet in Pine Bluff in 1960 on behalf of the Jefferson County Medical Society and Elvin Shuffield extended an invitation for the Pulaski County Society. By standing vote, the House accepted by invitation of the Jefferson County Society to meet in Pine Bluff.

President-Elect J. M. Kolb was escorted to the Speaker's stand where he briefly

thanked the House of Delegates for selecting him for the office.

The House adjourned at 3:45 p.m.

## REGISTRATION

Physicians .....	493
Medical Students .....	15
Scientific Exhibitors .....	11
Commercial Exhibitors .....	66
Other Guests .....	3
	<hr/> 588

## ANNOUNCEMENT

8"x10" reprints of the Annual Session photographs shown in this issue may be obtained by writing DeLux Studios, Hot Springs, Arkansas. \$1.50 each.

## ADDRESS OF DR. T. D. BROWN

### Annual Banquet

Main Dining Room, Arlington Hotel  
Tuesday Evening, May 6th

This memorable occasion marks the conclusion of my term of office as president of the Arkansas Medical Society. I am glad to have this opportunity of expressing my thanks and appreciation to those who have helped carry on the business affairs of our Society during the past year. It has been a wonderful opportunity to serve you, and it has been a most rewarding experience.

I feel especially grateful to my fellow officers, members of various committees and all of you who gave me your support and were good enough sports to overlook my many shortcomings and failures.

We must think only of the future — especially the next twelve months. We cannot depend too much upon the experience and ways of conduct in former years. Do not be afraid to strike out in new directions, with new courage and new enthusiasm. Only in this way, can we be sure of our growth and expansion to meet new conditions with the changing times. This is my only advice to the new officers.

To the outgoing officers and regular members, who are not taking office at this time, I am — fortunately — able to give a little more concrete and definite advice in the light of my experience during the past year. To them I can speak with the same assurance as the efficiency expert who was making a study of Federal Bureaus in Washington, D. C.



In one particular department of government operation, there was a large number of people — many of whom had come there without sufficient preparation.

The efficiency expert was making his rounds and questioned one clerk as follows: "What do you do here?" The clerk, fed up with red tape, buck passing, forms, office policies and, above all, efficiency experts, answered: "I don't do a damned thing!"

The second clerk, a fellow sufferer, said, "I don't do a damned thing either!"

The efficiency expert's ears perked up, "HMmmmmmm," he said, "duplication!!!" I have found a lot of duplication of doing nothing by many of our members. On the other hand, those who have assisted in the work by donating their time, as committee members, or officers, or in other capacities, have demonstrated a willingness to sacrifice their time and efforts, and I want to thank them very much. The spirit of these outstanding workers, should be carried into the ranks so that all will join in to make our society stronger and more progressive. This enthusiastic spirit of cooperation among all members would be the best tribute we could give to our new officers of the Arkansas Medical Society.

I am grateful for having had the opportunity of serving as president of the Arkansas Medical Society and shall always consider it as my highest honor.

## REPORT OF COMMITTEE ON PUBLIC RELATIONS

THOMAS G. JOHNSTON, Chairman

The membership of the Public Relations Committee of the Arkansas Medical Society for 1957-1958 is as follows: R. B. Robins, Camden; Louis A. Whittaker, Jr., Fort Smith; Joe B. Wharton, Jr., El Dorado; Gilbert D. Jay, III, West Memphis; Louis Hyatt, Monticello; John W. Dorman, Springdale; M. C. John, Jr., Stuttgart; Joseph A. Norton, Little Rock; Thomas G. Johnston, Little Rock.

\* \* \*

The Committee has not been called together during this year. Several matters were referred, and these were dealt with by the co-chairmen. There were several conferences between the President of the Arkansas Medical Society, the Executive Secretary of the Arkansas Medical Society, and the co-chairmen of this Committee, but very little action resulted.

Some matters were inherited from previous years, and these were dealt with as before.

Money was made available for the senior Medical Day program, which is an excellent public relations work that should be recognized and attended by more of our colleagues. Money was also made available to the Arkansas Medical Assistants' Society for their annual program.

One of the members of the Committee made a trip to the annual Public Relations meeting of the American Medical Association in Chicago. This was an interesting trip. The discussion were very stimulating. However, it was felt that the same information could be just as profitably gained by studying the pamphlets and other printed material available from the American Medical Association, and foregoing the trip. It was also felt that perhaps a statewide Public Relations meeting might be a worthwhile project of the State Committee. This could be planned by the State Public Relations Committee, with attendance of the various County Public Relations Committees and with programs furnished by the American Medical Association.

As in previous years, the co-chairmen of the Committee realize the difficulty of doing a good public relations job on a part-time basis, and with limited training for this type of endeavor. We feel strongly that the Arkansas Medical Society should have a professional public relations consultant working with this Committee and with the Council of the Society on a full or part-time basis. This is as important as having legal consultation. Such a public relations consultant could be available at all Council and Committee meetings and could see that the actions of the Committee and Council are properly worded and distributed to the various newspaper, radio, and television offices. There are several authoritative and ethical public relations firms in Arkansas which could do this job quite satisfactorily.

In order to make the Public Relations Committee more effective, we feel it desirable that the President of the Arkansas Medical Society name only a chairman, with the remainder of the Committee made up of the immediate past President of the Arkansas Medical Society, the current President of the Arkansas Medical Society, the Executive Secretary of the Arkansas Medical Society, and the chairmen of the various Public Relations Committees of the County Societies in Arkansas.

We also feel that the Public Relations Committee of the Arkansas Medical Society would be of more value to the Society and would gain in prestige among the various news agencies if the officers, the Council and the various state Committees would use the Public Relations Committee as a mouthpiece to express their opinions concerning medicine, public health, medical ethics, and medicolegal problems after prior approval by the Council or its Executive Committee.

Several committees of the Arkansas Medical Society have done fine work during the past year, and a few of these committees have received favorable publicity. There is a great opportunity for the Public Relations Committee to help the other committees, if allowed, by properly notifying press, radio, and television of their accomplishments.

The Council of the Arkansas Medical Society and the Executive Secretary of the Arkansas Medical Society are doing a wonderful job distributing the various articles of interest, chiefly from the American Medical Association, to our offices. This activity should be continued and could possibly be directed through the Public Relations Committee. There is still much worthwhile literature from the American Medical Association for professional and lay readers, available without charge, which should be regularly distributed over the state.

Another activity which could be directed satisfactorily by the Public Relations Committee is the distribution of information concerning the American Medical Education Foundation. The Public Relations Committee might also try to stimulate the County Public Relations Committees to sponsor or aid science fairs in the schools of their area, and, also, to obtain the various American Medical Association exhibits and films for showing in their local areas. These activities create much interest and usually obtain satisfactory news comment whenever they are done.

In summary, then, we offer to the Arkansas Medical Society these recommendations:

- (1) Continuing financial aid for the Senior Medical Day program.
- (2) Continuing financial aid for the Medical Assistants' Society.
- (3) Hiring a Public Relations Counsel for the Arkansas Medical Society.
- (4) Authorization of a statewide Public Relations meeting under the guidance of the State Committee.
- (5) Alter the membership of the Public Relations Committee as suggested in this report.
- (6) Instruction of the officers of the State Medical Society, of the Council of the State Medical Society, and the various committees to issue their reports to the public through the Public Relations Committee after the reports have been approved by the Executive Committee or the Council.
- (7) Allow the State Public Relations Committee to decide on the literature and direct distribution of literature going from the American Medical Association to our colleagues.
- (8) Allow the State Public Relations Committee to distribute regularly information concerning the American Medical Education Fund if there is to be no American Medical Education Fund Committee in the state.
- (9) The Arkansas Medical Society should go on record as favoring the local support of science fairs and local distribution of American Medical Association exhibits and films where the opportunities present themselves, and encouraging the County Public Relations Committees to attend to these matters in their areas.
- (10) The budget allowance of five hundred dollars (\$500) should be continued for the activities of the State Public Relations Committee for the coming year.

## REPORT OF COMMITTEE ON MEDICAL EDUCATION

JACK W. KENNEDY, Chairman

This is an amended report of the Medical Education Committee of the Arkansas Medical Society. On February 23, 1958 in the Conference room of the Medical Center a meeting of the Medical Education Committee was held with members of the Sub-Committee to the Advisory Council of the Medical Center composed of the following: Mrs. Robert Cheatham, Chairman, Mr. Joe Hardin, Mr. Cecil Cupp, Sr., Mr. Beloit Taylor. This committee represents the Advisory Council to the Medical Center, Mr. Winthrop Rockefeller, Chairman, who was unable to attend this meeting. Also present were: Dr. T. D. Brown, President of the Arkansas Medical Society, Dr. J. M. Kolb, Chairman of the Council of the Arkansas Medical Society, Dr. Charles Henry, Chairman of the Pulaski County Liaison Committee, Dr. Jerome Levy, Dr. Henry Hollenberg, Dr. Clyde Rodgers, Dr. H. Fay Jones, and Dr. Dan Autry, members of the Pulaski County Liaison Committee. Dr. F. Douglas Lawrason, Provost of the Medical Center, Mr. Wilson Evans, Hospital Administrator, and Mr. Bill Hughes, Information Officer also were present. Members of the Medical Education Committee present were: Dr. J. W. Kennedy, Chairman, Dr. C. C. Long, and Dr. John Wood. This meeting was called by the Chairman of the Medical Education Committee to discuss the acute financial situation of the Medical Center as now existing. The following recommendations were made by this group:

1. Since the quota bill was declared invalid by the courts a situation now exists with Pulaski County, Little Rock, and North Little Rock giving no active financial support to the Medical Center in providing care of indigent patients of this area.

2. That because of the lack of financial support of the local government it was pointed out that it would be very difficult to obtain a direct appropriation from the State Legislature for a permanent financial program for the Medical Center and that immediate steps should be taken to clarify this situation. Members of the Advisory Council Sub-Committee agreed to contact city and county officials at the earliest possible time to help alleviate this problem.

3. That the Chairman of the Medical Education Committee notify Judge Henry Yocum, Chairman of the Board of Trustees of the University of Arkansas; Dr. James Caldwell, President of the University of Arkansas; and Mr. Winthrop Rockefeller, Chairman of the Advisory Council and all officers of the Medical Society the proceedings and conclusions reached at this meeting.

4. It was further brought out the encroachment of the Welfare Department on the overall function of the University Hospital and Medical School. If the present plan is carried through 1959 eighty percent of the patients admitted to the Medical Center will be Welfare cases, hence the loss of teaching material with jeopardy to the training program and accreditation of the Medical School. It is a known fact that the future finan-



## PROCEEDINGS

cial stability of the Center must not be dependent on the Welfare Department.

As a result of this meeting the Chairman of the Board of Trustees, of the Univ. of Ark., Judge Henry Yoeum, and the President of the University of Arkansas, Dr. James T. Caldwell wrote letters to the Chairman of the Medical Education Committee expressing appreciation for the interest shown by the Medical Society.

As a result of this conference more publicity has been given to the needs of the Medical Center and constructive steps have been taken to help solve the financial situation.

### REPORT OF COMMITTEE ON MEDICAL LEGISLATION

H. Elvin Shuffield, Chairman

Your Legislative Committee has been extremely busy for an off-year. It has been assured that there will be legislation presented at the next session of the legislature in January of 1959 that will be detrimental to the health of the people of Arkansas. We strongly urge that each member of this society take a very active part in the political campaign during this summer, particularly those races that involve the House of Representatives and Senate, and once the candidates have been selected to his respective position, then please acquaint him with all the facts pertaining to the practice of medicine.

This is going to be a rather difficult battle, and it is going to be necessary to be brutally frank at times, but it is of the utmost importance that we protect the health of the good citizens of Arkansas, and see that they continue to get good medical care.

Your committee will be happy to furnish you with information pertaining to this legislation, and we welcome an opportunity to come before your county and district societies to acquaint you with the facts.

### REPORT CONSTITUTIONAL REVISIONS COMMITTEE

W. R. BROOKSHER, Chairman

The Committee on Constitutional Revision submits the following proposed amendments to the Constitution and By-Laws of the Arkansas Medical Society.

#### CONSTITUTION

##### Article II

To add the words: "to maintain medical ethics and to secure compliance with the art of medical practice (each phrase in this section to be serially numbered).

##### Article VI

To delete the words "secretary and treasurer," substituting therefor the hyphenated word, "secretary-treasurer," and change to:

SECTION 1. The Council shall consist of the Councilors, President, First Vice-President, President Elect, Secretary-Treasurer. The Speaker and Vice-Speaker of the House of Delegates and

past Presidents shall be members ex-officio without vote. There shall be two councilors from each council district, thus eliminating the present office of vice-councilor. All councilors shall have equal voting privileges. A majority of the voting members shall constitute a quorum.

SECTION 2. In any councilor district in which there is a city with a doctor population of 60 or more members of the Arkansas Medical Society, that city shall automatically be represented by a councilor. The other councilor to come from the remaining counties which constitute that councilor district.

#### Article VIII

Section 2. Delete the second sentence beginning with "after conferring" and ending "the meeting is to be held" and substituting therefor; "The time for holding each annual session shall be decided by the Committee on Arrangements of the Arkansas Medical Society and the President and the Executive Secretary."

#### Article IX

Section 1. To delete the words "secretary and treasurer," substituting therefor, the hyphenated word, "secretary-treasurer."

#### Article X

To serially number the present two paragraphs. To delete the figure "25.00" in the first paragraph and to substitute therefor, the figure "\$50.00."

#### Article XI

Section 2. To delete the word "on" in the last paragraph, substituting therefor, the word "upon."

#### Article XII

To add the words "by action of the House of Delegates" to the sentence in this article.

#### BY-LAWS

#### CHAPTER V

Changed to read:

Section 1. In the event of the death or removal of the President-Elect, or his inability to serve, the House of Delegates shall meet within thirty days in special session or otherwise, called by the President, to nominate and elect a President-Elect, provided that such death, removal or inability to serve shall occur not less than sixty days prior to an annual session, in which event the election shall be at the forthcoming annual session.

Section 2. At least ninety days prior to the annual meeting of the Society, the Councilor of each of the several districts shall call a meeting of the delegates of the component societies within his councilor district. In districts where the terms in office of the Councilor and Vice-Councilor expire at the next annual meeting, the delegates attending said district meeting shall then select a Councilor and Vice-Councilor to take office concurrently with the President of the State Society and to serve for the ensuing two (2) year term.

Section 3. At the district meetings provided for in Section 2 above, the delegates of each district shall select one (1) delegate to serve on a Committee on Nominations. No member of the

nominating committee shall succeed himself and where possible, the member of the nominating committee shall be elected from a different county in each councilor district in a manner of rotation. The Committee on Nominations thus comprised of one delegate so selected from each of the ten councilor districts, shall then meet on call of the President of the Society prior to the annual meeting, organize itself, and prepare a slate of nominees consisting of two (2) candidates for each of the offices to be filled at said annual meeting. Provided, no two candidates for the office of President-Elect shall be named from the same County. The slate of nominees so selected shall be published in the official publication of the Arkansas Medical Society at least thirty (30) days prior to the annual meeting and the Executive Secretary of said Society shall furnish to the President of each County Society a copy of the slate of nominees so selected.

Section 4. All elections shall be by printed ballot, and a majority of the votes cast shall be necessary to elect.

Section 5. In the balloting for nominees, if on the first ballot, no one receives a majority of the votes cast, the name receiving the smallest number of votes shall be dropped, and the balloting shall proceed in this manner until an election is had.

Section 6. The report of the Nominating Committee shall be the first order of business of the House of Delegates, after reading of the minutes, on the afternoon of the last day of the annual session.

Section 7. The election of officers shall be the second order of business of the House of Delegates on the afternoon of the last day of the annual session.

Section 8. Nothing in this Chapter shall be construed to prevent additional nominations be made by members of the House of Delegates.

## CHAPTER VI

### Section 4

Section 4. The Secretary-Treasurer, in the case of vacancy in the office of Executive Secretary, shall assume the duties of that office pending the filling of the vacancy, and shall perform such other duties as are imposed in this Constitution and By-laws. He shall be the scientific and professional advisor of the Executive Secretary, and shall assist the Executive Secretary concerning all matters without the jurisdiction of one not holding the degree of doctor of medicine. He shall give bond in the sum directed by the Council. He shall demand and receive all funds due the Society, together with bequests and donations. He shall pay money out of the treasury only on a written order of the Executive Secretary and he shall subject his accounts to an annual audit and shall annually render an account of his doings and of the state of the funds in his hands.

Section 6, to be re-numbered Section 5.

Section 7, to be re-numbered Section 6.

Section 8, to be re-numbered Section 7.

Section 9, to be re-numbered Section 8.

## CHAPTER X

Section 1. Delete the word "twenty" in the second sentence and substitute therefor, the word "thirty."

Section 3. Re-number as Chapter XI.

Section 4. Re-number as Chapter XII. Chapter XI Re-number as Chapter XIII.

## RESOLUTIONS

### Teaching of Medical Ethics and the Art of Medicine at the University of Arkansas School of Medicine

WHEREAS the subject of medical ethics and the teaching of that subject has been discussed by the Council, and brought before the House of Delegates of the Arkansas Medical Society, which is concerned with a seeming inadequacy in bringing this matter into sharp perspective, and

WHEREAS this Society has traditionally shown a deep and abiding interest in every phase of medical education, and has demonstrated such interest by its actions in constantly promoting the objects and desires of the medical school to our Legislature, and

WHEREAS we recognize and rejoice in the fact that the curriculum of the school is not surpassed in any institution anywhere; that it is excellent in teaching the science of medicine, but it appears to us that our curriculum is deficient with reference to the art of medical socio economics and an appreciation of the significance of organized medicine to such an extent that many of the students have exhibited a definite lack of information or interest concerning organized medicine, its traditions, its purposes, its goal, and its underlying philosophy as embodied in its spiritual aspects;

Therefore, BE IT RESOLVED by the House of Delegates of the Arkansas Medical Society, at its annual session at Hot Springs on May 7, 1958, that the Medical Education committee be instructed to advise the administration of the Medical Center of this apparent inadequacy of training as set out in the preceding paragraph, and that the Medical Education committee be further instructed to seek a satisfactory revision of the curriculum to correct this situation.

### RESOLUTION SUPPORTING THE TEXAS MEDICAL ASSOCIATION'S STAND FAVORING DISCONTINUANCE OF THE PRESENT MEDICARE PLAN FOR MILITARY DEPENDENTS

WHEREAS the clear and forceful resolution of the Texas Medical Association in which it terminated its Medicare contract has evoked profound sympathy among us, and we admire and commend the spirit which prompted it, Therefore

BE IT RESOLVED by the Arkansas Medical Society that we exert our influence in an effort to bring about the modification of that law, so that voluntary prepayment plans may be substituted for the uniformed services and dependents.

Following is the Texas Resolution referred to by the above:



## PROCEEDINGS

### TEXAS MEDICAL ASSOCIATION'S RESOLUTION REGARDING MEDICARE

WHEREAS, most state medical associations negotiated contracts with the Department of Defense in late 1956 in a sincere effort to cooperate in carrying out Public Law 569, the "Medicare" law providing medical care for the dependents of personnel in the uniformed services, although many such organizations and certainly many individual physicians had definite misgivings at that time, and

WHEREAS, there has developed strong convictions in the minds of many physicians that the philosophy of Public Law 569 and the methods by which it is being administered are fundamentally incorrect and not for the best interests of patients concerned nor of private enterprise as manifested in the area of the private practice of medicine, and

WHEREAS, Public Law 569 offers an insidious and potent opening wedge for the complete nationalization of the American system of medical practice, thus lowering standards of care of patients, and

WHEREAS, it is becoming increasingly apparent that Medicine must inevitably draw a line in possible participation by American physicians in plans of medical care directed by a governmental agency, and

WHEREAS, the House of Delegates of the Texas Medical Association, after consideration of a proposed renegotiated contract, on April 20, 1958, voted that its officers should not enter into any contract with a governmental agency, thereby terminating its former contract on Medicare with the Department of Defense, now

THEREFORE BE IT RESOLVED, that other state medical associations be invited to take similar action in terminating state contracts on Medicare, and

BE IT FURTHER RESOLVED, that the House of Delegates of the American Medical Association request its Board of Trustees through its Legislative Committee to initiate steps designed to bring about either the repeal of Public Law 569, the Medicare law, or its modification or amendment so as to provide medical care for the dependents of the personnel of uniformed services through programs underwritten by voluntary prepayment plans, or by pay increases adequate for such personnel to purchase voluntary pre-paid insurance, and

BE IT FURTHER RESOLVED, that copies of this resolution be sent to the President of the United States, members of his Cabinet, all members of Congress and to all state medical associations.

#### **Resolution Instructing Our Delegates to Aid the American Medical Association in Its Opposition to the Inclusion of Physicians in Compulsory Social Security**

WHEREAS we deplore any and all forms of regimentation, and we regard compulsory Social Security for physicians as being an extension of pure socialism, to which we are unalterably opposed, Therefore

BE IT RESOLVED by the House of Delegates of the Arkansas Medical Society, in annual session assembled at Hot Springs on May 7, 1958, that we endorse the stand of the American Medical Association in opposing compulsory Social Security for physicians, and we hereby instruct our delegates to the House of Representatives of the American Medical Association to make every effort in aid of the position of the American Medical Association.

### OPPOSITION TO SOCIAL SECURITY

BE IT RESOLVED, That the House of Delegates of the Arkansas Medical Society speaking as the official representative body of the physicians of Arkansas reaffirm its opposition to compulsory inclusion of physicians in Social Security; and

BE IT RESOLVED, that a copy of this resolution be sent to the President of the United States, to the two United States Senators and the six Congressmen from Arkansas, and a copy to the General Manager of the American Medical Association.

### FORAND BILL

WHEREAS, A bill known as the Forand Bill (H.R. 9467) providing governmental hospital and surgical care for approximately 13 million social security claimants, principally persons over 65 years of age, is now before the Congress of the United States; and

WHEREAS, this bill is obviously a backdoor approach to what the medical profession of this country has fought for a number of years and that is "socialized medicine;" and

WHEREAS, if this legislation should pass the Congress it is apparent that at the next session of Congress an attempt would be made to include the whole population of this country under such governmental medical care; and

WHEREAS, the passage of such legislation would mean the beginning of the destruction of the private practice of medicine in America; therefore, be it

RESOLVED, That the House of Delegates of the Arkansas Medical Society in session in Hot Springs, Arkansas May 5, 1958 express its opposition to this legislation as detrimental to the health and welfare of the American people: That a copy of this resolution be mailed to the President of the United States; to the two United States Senators and the six Congressmen for the State of Arkansas; and to the General Manager of the American Medical Association.

### INSURANCE COMMITTEE COMMENDATION

WHEREAS, for a number of years there has been very little concern manifested by the medical profession regarding health insurance carried by their patients; and,

WHEREAS, this has resulted in considerable abuse and misrepresentation regarding the types of insurance policies sold to the public; and

WHEREAS, the medical profession owes an obligation to the citizens of this State in helping to protect their interest so that no insurance company should take undue advantage; and

## PROCEEDINGS

WHEREAS, we presently have an insurance committee headed by Dr. Sam Jameson, that is taking a very active interest in cleaning up the health insurance situation in the State of Arkansas;

THEREFORE, BE IT RESOLVED, that the House of Delegates of the Arkansas Medical Society in Session May 5th, 1958, in Hot Springs compliment Dr. Sam Jameson and his committee and urge all members of the Arkansas Medical Society to actively support this committee during the coming year in accomplishing their objectives which will mean so much to the public welfare of the citizens of the State of Arkansas.

### AUTOMATIC STOP ORDER OF DANGEROUS DRUGS

WHEREAS, the Joint Committee on Accreditation of Hospitals' Bulletin Number 14 of December, 1957 states in Section F "there shall be an automatic stop order on all dangerous drugs." This committee does not define dangerous drugs.

WHEREAS, it is extremely difficult to have stop orders on some types of medication and not on all medication.

WHEREAS, since this order has been in effect there have been many instances of patients needlessly suffering because of automatic stop orders on medication ordered by their physicians.

WHEREAS, it is the considered opinion of the Arkansas Medical Society that physicians capable of ordering drugs are capable of stopping those same drugs.

WHEREAS, it is the considered opinion of the Arkansas Medical Society that this order by the Joint Committee on Accreditation of Hospitals is an arbitrary and unnecessary invasion of the doctor-patient relationship.

THEREFORE, BE IT RESOLVED, that the Arkansas Medical Society express strong opposition to this order, and that they endeavor to have their delegate to the American Medical Association have a similar resolution adopted by the House of Delegates of that body, and that copies of the resolution be sent to the Joint Committee on Accreditation of Hospitals, the American Medical Association, the American College of Physicians, the American College of Surgeons, American Hospital Association, and the Canadian Medical Association.

### APPRECIATION

RESOLVED: That the Arkansas Medical Society, and the individual members thereof, are deeply grateful to all those who have by their co-operative efforts, made this the 82nd annual session, a thoroughly happy and rewarding occasion.

Among those to whom we extend our special thanks are:

The committee on arrangements, without which all our efforts would be futile;

The Garland county Society, its officers, and the group of which it is composed;

The donors of our scientific exhibits;

Our commercial exhibitors, represented by most courteous attendants, and which have greatly benefitted us;

Our distinguished guests, who appeared on the program, and have inspired us all in sharing their experiences with us;

The press and other media of communication, who have been most generous in their treatment of our activities;

The management of the Arlington Hotel, who have facilitated our efforts in every way to make the sessions outstanding.

Our stay here has been sweetened by the many acts of kindness and friendship with which we have been surrounded.

We shall often think of you from afar, and our fondest recollections will be of our host city, incomparable in its beauty and the hospitality of its citizens.

The following editorial taken from the Southern States Industrial Council Bulletin was approved by the Reference Committee:

### BUSINESS AND POLITICS

#### THURMAN SENSING

Down through the years, business and professional men—and organizations formed by business and professional men—have taken the attitude that politics is something "unclean" which decent people should not touch. Such an attitude, of course, is entirely wrong. Politics is the science of government. Government is a way of life—and this way of life is eventually determined by those who run the government.

**Yet we often hear it said—and by members of this so-called better class of citizens—"I wouldn't get into politics for anything in the world; I just wouldn't have anything to do with politics—it's a dirty business."**

Surely, these people are not thinking when they say that. Perhaps if these "better citizens" would get more actively into politics, they might change the complexion a little. That wasn't the way the founders of our nation felt about it, or the men who built the nation in its early years. They were of the opinion that taking part in politics, helping run their government, was the most important thing they could do.

**But thinking or not, the result is the same. Those who devote their time and attention to politics govern those who do not.**

It is high time—in fact, it is getting late in the day—when the business, industrial and professional men of America should enter actively into politics instead of mak-



ing every effort to keep out of politics. We can very well say that it is mainly American business that creates the wealth that pays the taxes that support government and the politicians who run government. *The business men of America pay the piper; they had better be interested in the tune.*

*A large percentage of the business men of this country devote all their time and energy to making a success of their business, apparently under the impression that politics has nothing to do with this success. It is to be wondered who they think make the rules and regulations under which their businesses operate.*

It is the American free enterprise system which has made possible the amazing success of American business. The first concern of the business men of America, therefore, should be the preservation of this system, for without it no amount of time and devotion will make their businesses succeed.

*The only way the American free enterprise system can be maintained is by having a government that is favorable to its maintenance. The only way we can have a government that is favorable to free enterprise is by having those who believe in it elect office holders who will support their belief. It is too late to appeal to office holders in behalf of the free enterprise system after they have been elected to office by those opposed to this system.*

Of course, we console ourselves here in America by saying that if those holding public office do not conduct themselves and manage our affairs to suit us, we will "throw the rascals out." But if they are big enough rascals and if they are able to stay in office long enough, they will build up a system so impregnable that throwing them out becomes a very difficult job. This is a sad lesson the business men of Great Britain have learned since they got rid of their Labor Government—and it seems we are well on the way to learning the same lesson in this country.

There are literally thousands of business and professional organizations in this country—civic clubs, chambers of commerce, trade associations, industrial organizations, etc.—that could be very pow-

erful in informing the people and electing people to office if they would, but they avoid the very word 'politics' in their activities like they would avoid the plague.

*As a result, the control of government has been taken out of their hands and, generally speaking, they do not have the ghost of a chance of getting passed in Congress the measures they want or defeating measures which they oppose. While these organizations have been sitting idly by, contenting themselves with meetings, discussions and resolutions, such other organizations as the A.F.L.-C.I.O. and the Americans for Democratic Action have spent hundreds of thousands of dollars in election campaigns, and their political activity departments have actively worked to get men elected to office who oppose everything the adherents of free enterprise want.*

As a result, the Committees of Congress and the Congress itself are stacked against any such measures as a "right-to-work" law or placing the unions under the anti-trust law, or any other law which the unions consider unfavorable to themselves. This situation also applies to the passage of a sound tax program; in fact, to the passage of any legislation which would reverse the socialistic philosophy of state control and the continued growth of centralized government which have fastened themselves upon our nation.

In a recent speech, Congressman Ralph W. Gwinn, of New York, emphasized the enormous political activities of the labor unions and the stupendous amount of money they are spending. He said that the businessman made a great contribution, especially financially, to the election of a President in 1956, but pointed out that at the same time the AFL-CIO was electing a Congress, a field of political activity in which business has been exceedingly lax. Mr. Gwinn goes on to say that the Congress enacts all of the laws, and while the President may make proposals, the Congress determines what action it will take.

*It is obvious from what Mr. Gwinn says that the labor unions have set themselves up primarily as a great political organization and that this feature of their work is*



considered more important than their economic activities in behalf of their members; that is, that being able to control the activities of the Congress they are insured of an ability to carry out their other programs and to use whatever means are necessary to this end.

We have seen a steady weakening of conservative strength in most of the Congressional committees in recent years; in fact, in the whole Congress. In the Congress last year 216 Members of the House and 45 Senators voted a majority of the time in accordance with the recommendations of the Americans for Democratic Action, a front organization for most of the left-wing pressure groups, including labor. It is only natural that they should

have done so, because they feel that these are the people who put them in office.

*Organized labor is subject to exactly the same restrictions against political action as business organizations, yet labor has built a mighty political machine within the last ten years, while business has very seldom spoken out, much less taken any effective political action.*

The time has long passed when business men should take any queasy attitude toward speaking up and openly entering the political arena. Business must get into politics—for its own self-preservation, for the preservation of the free enterprise system as a whole, and for the building of a better America.



*34th Annual Session*  
**Woman's Auxiliary**  
to the  
**ARKANSAS MEDICAL SOCIETY**  
Arlington Hotel, Hot Springs, Arkansas  
May 5th and 6th, 1958



**MRS. GORDON P. OATES**  
Little Rock  
President, Woman's Auxiliary to the  
Arkansas Medical Society, 1958-59

### Minutes of Board Meeting

Meeting of the Board of the Woman's Auxiliary to the Arkansas Medical Society, 8:00 a. m., May 5, 1958, Montague Room, Arlington Hotel, Hot Springs, Arkansas.

The meeting was called to order by the state president, Mrs. Jack Kennessy. Invocation was given by Mrs. T. D. Brown, Chaplain.

The roll call was called. Fourteen board members were present.

Minutes of the previous board meeting were read and corrected.

Mrs. Kennedy thanked the group for the action taken at the previous board meeting which recommended her to national for an office.

A letter of acknowledgment to Mrs. Lawson for the \$10.00 donation to the State Medical Assistants Society was received from Miss Euper and read by Mrs. Reid.

Mrs. Mason Lawson read the treasurer's report.

The report of Mrs. V. T. Webb, Chairman of Finance Committee, was read by Mrs. Lawson. The report contained the proposed budget for the coming year. Mrs. Lawson moved that their budget be recommended to the House of Delegates. The motion was seconded and passed.

Mrs. Lawson read the report of the Finance Committee which consisted of the new rules. She then moved to have the rules adopted. The motion was seconded by Mrs. Hoyt Choate and passed.

Mrs. Lawson read a note from the National president concerning membership. Mrs. Lawson moved that there be "no differentiation in categories of membership in regard to state dues. Seconded by Mrs. Louis K. Hundley. Motion carried.

Mrs. Frank moved to adjourn.

Meeting adjourned at 9:10 a. m. May 5th, 1958.

### Minutes of the 34th General Session of the Woman's Auxiliary to the Arkansas Medical Society

10:00 a. m., May 5th, 1958

West Parlor, Arlington Hotel,  
Hot Springs, Arkansas

The meeting was called to order by the President, Mrs. Jack Kennedy. Invocation was given by Mrs. T. D. Brown, Chaplain.

Mrs. W. A. Woodcock, President of the Garland County, Hostess, and Mrs. John W. Dodson, Convention Chairman, were introduced by the President.

Address of welcome was given by Mrs. Louis McFarland, President-Elect of Garland County. The response to the welcome was given by Mrs. H. W. Ward.

Introduction of the honor guest, Mrs. Paul Craig, President of the Woman's Auxiliary to the American Medical Association, was made by Mrs. Jack Kennedy.

The roll was called by the secretary and the delegates were seated.

The minutes of the 1957 convention were called for. Mrs. Louis K. Hundley moved that the minutes not be read. Motion seconded and carried.

Recommendations of the Board were read. The House of Delegates accepted the budget as proposed and acted favorably on the motion concerning membership. A section from the constitution was read:

"Chapter 11, Election of Officers. Section 1 (a) A nominating committee consisting of five members shall be elected by the convention at its first general session. It shall consist of the immediate past president who shall be designated as chairman, two members from the executive board, and two members from the body of the convention members. The president and president-elect shall serve as members of the committee without a vote."

For the coming year, Mrs. Jack Kennedy would serve as chairman of the nominating committee. Mrs. Mason Lawson and Mrs. Joe Reid were elected from the board and Mrs. C. E. Kitchens and Mrs. Edwin Dildy from the general body.



The President interrupted the business meeting to introduce Dr. T. D. Brown, President of the Arkansas Medical Society, who in turn introduced Mr. Aubrey Gates, Surgeon General Leroy Burney, USPHS, and Dr. Horace Munger. Dr. Brown spoke briefly on the points of the Arkansas Medical Society's program.

Mrs. McKnight was introduced as "the auxiliary of her county all these years."

Reports of the President, officers and committee chairmen were called for.

Mrs. Forestiere, first vice president, took the chair while the president gave her report. Mrs. Mason Lawson pinned the new pin for the president on Mrs. Jack Kennedy.

The President's report was given.

Reports by the following persons were given:

Mrs. Gordon Oates, President-elect

Mrs. A. J. Forestiere, First Vice-president

Mrs. Howard Rands, Second Vice-president

Mrs. Mason Lawson, Treasurer

Mrs. Lawson also read the recommendations from the finance committee, and moved "that the expenditure of \$150.00 for delegates to the Woman's Auxiliary to the Student American Medical Association be ratified." Motion carried.

Mrs. Lawson moved "that the \$50.00 allotted for editor's expense be given to A.M.E.F. Motion seconded and passed.

Mrs. Lawson also moved that "the \$300.00 placed in the budget for the ARK-MAP and not used for the purpose, be given to the Ilse F. Oates Student Loan Fund. Motion seconded and passed.

The proposed budget was recommended to the House of Delegates and was acted on favorably.

The treasurer's report was accepted for audit.

Reports of Committee Chairmen were read by the following:

Mrs. John Gray, A.M.E.F.

Mrs. T. D. Brown, Chaplain

Mrs. Robert Atkinson, Civil Defense

Mrs. Hoyt Choate, Earle Chambers Memorial Library Fund

Mrs. Lawson moved that the letters from the librarians of the two tuberculosis

sanatoria be included in the printing of the minutes and reports. Motion carried.

In the absence of Mrs. V. T. Webb, Finance Chairman, Mrs. Lawson stated that Mrs. Webb would audit the books.

Mrs. Ray Fulmer reported on Ilse F. Oates Student Loan Fund

Mrs. Paul Gray, Legislation

Mrs. Ross Fowler, Mental Health

Mrs. Louis Hundley, Recruitment for Health Careers

In the absence of Mrs. Riley, Mrs. Hoyt Choate reported on revisions. Mrs. Choate moved that revisions to American Medical Auxiliary not be read and that the Arkansas delegates be instructed to vote for the revisions. Motion carried. The Revisions Committee made the recommendations as follows:

That item 3 under "Standing Rules" of the Constitution be revised in the following manner. Number 3 now reads: "Student Loan Fund."

A. The beneficiaries of the Student Loan Fund shall be students of the junior and senior years of the medical colleges in Arkansas recognized by the Arkansas Medical Society.

If revised shall read:

3. Funds — A. Ilse F. Oates Student Loan Fund

This fund is designated primarily for the use of the junior and senior students attending the University of Arkansas School of Medicine and bears interest at 3% to begin at graduation. If a student leaves school, the note becomes due immediately. The fund is administered by a committee composed of a chairman, advisor, state auxiliary finance committee chairman and the State Auxiliary president and president-elect as ex-officio members. The Chairman may act upon loans with the advice of any one of committee members.

B. Martha Harding Gann Memorial Loan Fund, Inc.

This fund shall be administered by a permanent chairman, as stated in the Articles of Incorporation which are on file at the Arkansas State Capitol. Beneficiaries are student nurses in training in accredited schools in Arkansas. The note becomes due at graduation, or when a student quits training for any reason at any time before graduation, and bears 3% interest until paid.

C. Erle Chambers Memorial Library Fund

This Committee contacts women's clubs requesting books for money for books for the two tuberculosis sanatoria from lists supplied by county auxiliaries.

President appointed Convention Committees:

Time keeper: Mrs. Joe Reid

Reading Committee: Chairman Mrs. Hoyt Choate; Mrs. Howard Rands; Mrs. Joe Verser

## PROCEEDINGS

Resolutions Committee: Mrs. C. E. Kitchens, Mrs. R. C. Dickinson, Mrs. Pierre Redman

Mrs. Choate moved that "the revisions committee be instructed to make necessary revisions." Motion carried.

Mrs. Gordon P. Oates moved that reports of officers and committee chairmen be accepted as a whole. Motion carried.

Mrs. Louis K. Hundley moved that the general body send an expression of sympathy to Mrs. A. A. Little on the death of her husband.

Meeting adjourned at 11:45 by president.

At 1:00 p. m. a luncheon was held in the Fountain Room of the Arlington Hotel with Mrs. Jack W. Kennedy, President, presiding. Invocation was given by Mrs. C. C. Long. Guests and members at large were introduced. Mrs. Mason Lawson introduced the guest speaker for the luncheon, Mrs. Paul A. Craig, President of the Woman's Auxiliary to the American Medical Association.

A tea and style show was held at 3:30 p. m. in the West Parlor of the Arlington Hotel.

### MINUTES

#### Second General Session

May 6th, 1958

The president called the meeting to order at 9:45 a. m. Mrs. T. D. Brown, chaplain, gave the invocation. Mrs. Paul Gray, parliamentarian, reported a quorum present.

A roll call for county presidents to give their reports was made. Those reporting were:

Mrs. Wm. P. Barron, Boone County  
Mrs. Andrew Goesl, Bowie, Miller County  
Mrs. Louis Tilley, Clark County  
Mrs. A. E. Andrews, Greene-Clay County  
Mrs. W. A. Woodcock, Jefferson County  
Mrs. Hershel Wilmoth, Howard-Pike County  
Mrs. A. A. Berger, President-elect, for Phillips County  
Mrs. Marlin Hoge, Sebastian County  
Mrs. William Cooper, Pulaski County  
Mrs. Charles Dixon, Southeast Auxiliary  
Mrs. Austin Doren, Union County  
Mrs. H. W. Ward, Washington County

Mrs. Gordon P. Oates read Mrs. Porter Rodgers' report from White County

Mrs. Bascom Raney, Craighead-Poinsett County

Mrs. John Hundley of Little Rock made a report from the nominating committee and gave the slate of officers from the nominating committee.

Requests for nominations from the floor was made—there were none.

Mrs. Mason Lawson moved that nominations be closed. Motion carried. She also moved to elect slate as presented by nominating committee. Motion carried.

Mrs. Lawson reported on action of the board at the January 1958 meeting, and moved that "the whole House of Delegates accept the action of the board, and that the House send a telegram to the National Nominating Committee expressing unanimous approval of the action in recommending Mrs. Jack Kennedy for a national office." The motion was seconded by Mrs. Frank Adams and carried.

Mrs. Smith from Russellville, Chairman of Today's Health and Bulletin, gave her report.

Mrs. Frank Adams moved that the reports be accepted as a whole, seconded by Mrs. Goesl and carried.

The meeting was then opened for discussion.

Mrs. Gordon Oates moved meeting adjourn.

Meeting adjourned at 10:45 a. m.

At 11:30 a. m. the Auxiliary met jointly with the Medical Society for a Memorial Service for deceased members in the Ballroom of the Arlington Hotel.

A luncheon was held at the Hot Springs Country Club beginning at 1:00 p. m. with invocation by Mrs. Hoyt Choate. Installation of new officers was held after the luncheon by Mrs. Mason Lawson.

Respectfully submitted,

Mrs. A. S. Koenig

Recording Secretary



# Modern Management of Essential Hypertension\*

RAY W. GIFFORD, JR., M.D.,

*Section of Medicine,  
Mayo Clinic and Mayo Foundation,†  
Rochester, Minnesota*

Gone are the days when the medical treatment of essential hypertension consisted largely of sedation, ineffective medication, unpalatable diets and close surveillance with prayerful expectancy. With effective medicaments, properly administered, it is now possible to control the blood pressures of most patients with hypertension regardless of its severity. This does not imply that the medical management of hypertension cannot be improved or that it is without serious disadvantages. Physicians familiar with the use of antihypertensive drugs alternately have been elated by the profound reduction in blood pressure that such agents produce and disappointed by the frequency and severity of unpleasant side effects attendant on their administration. With patient understanding, however, the informed physician usually can manipulate the hypotensive drugs now at his disposal into a consonant regimen that effectively reduces blood pressure without seriously discommoding the patient.

The perspicacious physician does not wish to commit his patient unnecessarily to an arduous regimen of medical treatment of hypertension. Therefore, he first rules out with appropriate examinations such potentially curable causes of hypertension as coarctation of the aorta, pheochromocytoma, unilateral renal disease, occlusive disease of the renal arteries and primary aldosteronism. Secondly, he carefully evaluates the cardiovascular and renal systems of his hypertensive patients, for such data have an important bearing not only on the indications for drug therapy but also on the prognosis. Furthermore, numerous de-

terminations of blood pressure over an extended period often prevent unnecessary, misguided or erroneously evaluated treatment. Thirdly, the conscientious physician, in his enthusiasm for the newer hypotensive drugs, does not abandon the less spectacular but nevertheless important therapeutic measures that include reduction of weight, when indicated, adequate rest and relaxation, mild sedation and a confident reassuring attitude on the part of the physician.

Finally, once the decision has been made that a patient needs specific treatment for hypertension, the physician must individualize the program so that the best results may be obtained with the least side effects. In order to do this, it is important that the physician have a working knowledge of the drugs available for such a regimen.

## HYPOTENSIVE DRUGS

The rapid advent of effective medicaments for hypertension has produced a bewildering array of proprietary preparations that have led to confusion and consternation on the part of the busy practitioner. It is comforting to remember, therefore, that only four classes of drugs are of sufficient importance in the modern management of essential hypertension to warrant discussion.

*Veratrum* (Table 1).—*Veratrum* is not new in the treatment of hypertension, but the purification of extracts and the isolation of single alkaloids are new and have permitted more precise standardization of dosage. This overcomes some of the older objections to the use of *Veratrum*. Treatment with *Veratrum* always must be started with the lower doses shown in table 1. The dose is gradually increased until the desired hypotensive

\*Read at the meeting of the Arkansas Academy of General Practice, Little Rock, Arkansas, October 16, 1957.

†The Mayo Foundation, Rochester, Minnesota, is a part of the Graduate School of the University of Minnesota.



TABLE 1  
VERATRUM: PREPARATIONS AND DOSES

Preparation	Proprietary Name	Daily Total Dose (divided into four doses)
Purified alkaloids		
Protoveratrines A and B	Veralba	0.8-3.0 mg.
Protoveratrine A and B maleates	Provell maleate	
Extract of ester alkaloids		
Alkavervir	Veriloid	8-24 mg.
Cryptenamine tannate	Unitensen	
Whole powdered Veratrum viride	Vertavis	30-90 Craw units

effect is obtained or until symptoms of toxicity prohibit further increases. It is best to administer the drug after meals and at bedtime. Unfortunately, all preparations of Veratrum induce a discouragingly high incidence of side effects when given in amounts adequate to reduce blood pressure. These side effects include epigastric burning, salivation, nausea, vomiting, hiccup and bradycardia. These unpleasant symptoms can be attributed

to vagal stimulation and can be abolished by the administration of atropine without interfering with the hypotensive effect. Because of the narrow margin between therapeutic and toxic doses, preparations of Veratrum seldom are used alone in the treatment of hypertension, but it is occasionally advantageous to use Veratrum in combination with Rauwolfia or hydralazine or both. In this manner, it is sometimes possible to obtain adequate

TABLE 2  
RAUWOLFIA SERPENTINA: PREPARATIONS AND DOSES

Preparation	Proprietary Name	Daily Dose (single or divided), mg.
Reserpine (single alkaloid)	Serpasil, reserpoid, sandril, rau-sed, serpiloid	0.1-1.0
Rescinnamine (single alkaloid)	Moderil	0.25-1.5
Deserpidine (single alkaloid)	Harmonyl	0.5-2.0
Alseroxylon fraction (alkaloidal extract)	Rauwiloid Rautensin	2.0-8.0
Whole root	Raudixin	100-500

reduction of blood pressure with smaller doses of Veratrum, thus eliminating or minimizing its unpleasant side effects.

*Rauwolfia*.—When specific therapy for mild to moderate hypertension is indicated, one of the preparations of *Rauwolfia serpentina* (table 2) is a good cornerstone on which to build a therapeutic regimen. Since the hypotensive effect of *Rauwolfia* may not be manifested promptly, its efficacy should not be judged for at least 4, and perhaps 6, weeks after initiation of treatment. If the hypertension is not well controlled at the end of this period and the patient is tolerating the *Rauwolfia* preparation satisfactorily, it is better to supplement the program with either hydralazine or one of the Veratrum preparations than to abandon *Rauwolfia* entirely. In the management of the acute hypertensive crisis, reserpine administered in parenteral doses of 3 to 5 mg. has been effective, but doses of this size should not be administered for more than a few days at a time because of their side effects. In the long-term treatment of severe hypertension, *Rauwolfia* is seldom effective alone but can be a helpful adjunct when given with ganglion-blocking agents. Side effects frequently are pro-

duced by the various preparations of *Rauwolfia*, and thus the doses should be kept at the lowest level compatible with satisfactory control of the hypertension. The comfort of the patient often is best served by adding another drug to the regimen rather than increasing the dose of *Rauwolfia* when hypertension cannot be controlled with tolerable doses of the latter drug. The side effects produced by *Rauwolfia* include nasal stuffiness, drowsiness, bradycardia, mild laxation, lassitude, weird and bizarre dreams, muscular aching, parkinsonian rigidity and mental depression. While most of these symptoms usually can be tolerated by the patient, the parkinsonian rigidity and mental depression are of such serious import as to compel prompt cessation of therapy. It is essential to remember that *Rauwolfia* is contraindicated in patients who are depressed or who give a history of having been depressed in the past (1). Caution should be exercised in the administration of *Rauwolfia* to patients who have or have had active peptic ulcer, since these compounds increase gastric acidity. Data presented by Ford and Moyer (2) indicate that the alseroxylon fraction produces the same hypotensive

TABLE 3  
HYDRALAZINE HYDROCHLORIDE: SIDE EFFECTS

- 
- |   |  |
|---|--|
| I. Early                                | A. Troublesome but not serious—tend to disappear or improve with continued administration <ol style="list-style-type: none"> <li>1. Headache</li> <li>2. Palpitation and tachycardia</li> <li>3. Flushing</li> <li>4. Bad taste and dry mouth</li> <li>5. Anxiety and mild depression</li> <li>6. Nausea and vomiting</li> </ol> |
| B. Serious—require cessation of therapy | <ol style="list-style-type: none"> <li>1. Exacerbation of coronary insufficiency</li> <li>2. Edema of feet and legs</li> <li>3. Chills and fever</li> <li>4. Toxic psychosis or severe depression</li> </ol>   |
- 
- |  |  |
|--|--|
| II. Delayed and serious—require cessation of therapy | <ol style="list-style-type: none"> <li>1. Generalized aching and stiffness</li> <li>2. Rheumatoid syndrome</li> <li>3. "Collagen" or lupuslike reaction (hydralazine disease)</li> </ol> |
|--|--|
-



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effect as reserpine with fewer and less severe side reactions.

*Hydralazine (Apresoline) Hydrochloride.*—Hydralazine hydrochloride is an effective hypotensive agent but, because of the great incidence of side reactions that it produces when used alone, it is most useful when employed in combination with other hypotensive agents. These side reactions are listed in table 3; most of these unpleasant effects become less noticeable as treatment progresses. Antihistaminic drugs, barbiturates and salicylates are helpful in alleviating some of the symptoms listed in category IA of table 3. However, increasing coronary insufficiency, fever, edema, arthralgia and the lupuslike syndrome are indications for cessation of treatment with hydralazine. The latter syndrome, sometimes called "hydralazine disease," clinically resembles disseminated lupus erythematosus, and L. E. cells have been found in the blood of patients with this syndrome. Fortunately, the symptoms promptly subside when the drug is withdrawn, and physicians have little to fear from hydralazine if they observe their patients closely. Hydralazine disease rarely occurs when the total daily dose is 200 mg. or less. Hydralazine is usually given three or four times daily. It can be used in combination with Rauwolfia or Veratrum or both in the treatment of mild and moderately severe hypertension, and it is frequently useful in combination with gang-

lion-blocking agents in the treatment of severe hypertension.

GANGLION-BLOCKING DRUGS

The ganglion-blocking drugs are the most potent hypotensive agents presently available for the chronic treatment of hypertension; however, because of this potency, they are potentially the most dangerous, and their administration frequently is accompanied by severe and unpleasant side effects. For these reasons, the ganglion-blocking agents usually are reserved for the treatment of patients who have group 3 or group 4 hypertension (Keith-Wagener-Barker classification [3]) or for those patients with group 2 hypertension who have not responded to adequate doses of less potent drugs.

When hypertension is severe and it is imperative that blood pressure be reduced rather promptly, it is preferable that the patient be hospitalized and that treatment be started with ganglion-blocking agents under close supervision. It has been the experience of my colleagues and me that those patients who learn to take their own blood pressures are better able to keep their hypertension under adequate control and, therefore, obtain the best results from this type of treatment. This is analogous to the diabetic who tests his urine to govern doses of insulin.

Treatment is started using the smallest doses shown in table 4. If the patient is hospitalized and can be observed closely, it is safe to change each dose by increments

TABLE 4  
GANGLION-BLOCKING AGENTS: PREPARATIONS AND DOSES

Preparation	Proprietary Name	Single Dose, mg.	Doses per 24 Hours
Mecamylamine hydrochloride	Inversine	2.5-40	2-3
Chlorisondamine chloride	Ecolid	10-200	2-3
Pentolinium tartrate	Ansolysen	20-500	3-4
Hexamethonium chloride	Methium Hexameton	125-1500	4 or more



TABLE 5  
GANGLION-BLOCKING AGENTS: SIDE EFFECTS AND THEIR TREATMENT

	Side Effects	Treatment or Antidote
Sympathetic blockade	Orthostatic weakness or syncope	Reduce dose; recumbent position
	Excessive hypotension	Shock position; pressor drugs (phenylephrine, levarterenol)
Parasympathetic blockade	Blurred vision and photophobia	Pilocarpine eye drops; positive lens; dark glasses
	Dryness of mouth	Pilocarpine nitrate, 5 mg. before meals; chewing gum
	Constipation	Laxatives regularly; prostigmin bromide, 15 mg. sublingually; adequate fluids
	Paralytic ileus	Stop use of drug; prostigmin methylsulfate, 1.0 mg. intramuscularly every hour; intubation
	Urinary retention	Prostigmin bromide, 15 mg. sublingually; urecholine chloride, 5 to 10 mg.; void before each dose; prostatic resection
	Impotence	Omit appropriate doses

equal to the initial dose as often as every second day until the blood pressure is brought under control or until side effects prohibit further increments. If the patient is being treated on an ambulatory basis, it is safest to increase the dose very gradually and at less frequent intervals. This is especially true if the patient is not recording his own blood pressure. Patients who record their blood pressures at home are instructed to do so while in the sitting position, always employing the same arm. This eliminates as many variables as possible. Once the maintenance dose has been established, the patients are taught to vary the dose depending on the level of blood pressure immediately before the scheduled time for medication. For the average patient, the established dose should be taken if the systolic blood pressure is more than 140 mm. of mercury; if the systolic blood pressure is between 120 and 140 mm., the patient takes

only half the established maintenance dose; if the systolic blood pressure is less than 120 mm., the patient omits the dose entirely. These limits can be set higher if for various reasons it is desirable to maintain less rigid control of the blood pressure.

Ganglion-blocking agents characteristically produce rather wide fluctuations in blood pressure throughout the day. The concomitant administration of hydralazine or Rauwolfia or both sometimes helps to achieve smoother control of blood pressure and may permit reduction of the doses of ganglion-blocking agents, thereby eliminating or ameliorating some of the unpleasant side effects. Experience has taught, however, that wide fluctuations in blood pressure are not incompatible with good results, and zealous attempts at eradicating such fluctuations often cause incapacitating side reactions.

All the preparations listed in table 4



produce similar side effects qualitatively and quantitatively when administered in effective doses, although in individual cases one of the ganglion-blocking agents may be better tolerated than another; thus, it is always well to try other preparations if one is causing untoward effects. Mecamylamine hydrochloride occasionally produces coarse tremor and a toxic psychosis in hypertensive patients with azotemia. Fatal interstitial pneumonitis has been attributed to the use of hexamethonium chloride in azotemic patients with hypertension. Since neither of these uncommon side reactions has been reported from the use of chlorisondamine chloride or pentolinium tartrate, it is perhaps safest to use one of these preparations for the treatment of hypertension complicated by renal insufficiency.

Most of the undesirable side effects resulting from administration of ganglion-blocking drugs can be attributed to the action of these agents on the parasympathetic ganglia (table 5). Many of these unpleasant symptoms become less noticeable or disappear with prolonged administration of the drug. A sympathetic physician's solicitude during the first trying weeks of treatment may prevent a disgruntled and unhappy patient from abandoning an otherwise successful therapeutic regimen. Table 5 contains some suggestions for treatment that may be helpful in alleviating the side effects produced by ganglion-blocking drugs. It is particularly important that patients who are receiving these drugs should have regular bowel movements, since paralytic ileus is potentially a serious complication of treatment with these agents. When treatment is being started, it is best that patients be urged to take laxatives regularly, for anticipation of this complication may prevent serious trouble.

#### OTHER FORMS OF TREATMENT

*Diet.*—For most patients with hypertension, restriction of the intake of sodium is not essential to successful treatment with the newer drugs. If restriction of sodium is to be effective in the management of hypertension, the sodium content of the diet must be in the range of 500 mg. per day or less. Such diets are unpalatable and objectionable to most

patients. Restriction of sodium is, of course, advisable when congestive heart failure complicates hypertension. Experience has shown that moderate restriction of dietary sodium to 2 gm. or less daily often augments the effect of ganglion-blocking agents, and this can be a helpful adjunct to therapy when hypertension is particularly resistant to medical treatment or when ganglion-blocking agents are producing unbearable side effects.

*Diuretics.*—A new diuretic agent, namely chlorothiazide (diuril), has been used recently in conjunction with various of the antihypertensive drugs already discussed. Chlorothiazide is particularly effective when given in combination with ganglion-blocking drugs; in fact, caution must be exerted when chlorothiazide is added to a regimen that includes ganglion-blocking agents, since such a combination may lead to pronounced orthostatic hypotension with syncope even though the hypertension was poorly controlled previously. Chlorothiazide frequently permits reduction of the dose of the ganglion-blocking agent and, therefore, tends to eliminate or ameliorate some of the aforementioned side effects. The action of chlorothiazide alone or in combination with Rauwolfia, hydralazine or Veratrum in the treatment of hypertension is less spectacular than when it is used in combination with ganglion-blocking agents. It has been postulated that the action of chlorothiazide in augmenting the hypotensive effect of ganglion-blocking agents is due to its diuretic properties, leading to increased excretion of sodium, with resulting reduction in extracellular and plasma volumes. This has not been proved, nor has it been shown that other diuretic agents are equally effective. The dose of chlorothiazide varies from 250 mg. once a day to 1 gm. twice a day. So far as is presently known, it can be given indefinitely. Until more is known about this potent agent, frequent determinations of serum electrolytes are advisable to detect evidences of depletion.

*Surgical Intervention.*—A number of patients are of such temperament that they cannot tolerate or will not adhere to a strict medical regimen for the treat-

ment of hypertension. Lumbodorsal sympathectomy is advisable for such patients if renal function has not been compromised and if the hypertensive vascular disease is definitely progressing.

#### SELECTION OF PATIENTS FOR TREATMENT

Of equal importance to the knowledge of proper use of the newer hypotensive drugs is the selection of hypertensive patients who need treatment.

*Uncomplicated Hypertension.*—Patients who manifest the findings of group 3 or group 4 hypertensive retinopathy are in urgent need of vigorous treatment for their hypertension, even though it is uncomplicated and asymptomatic, because the prognosis is so poor without treatment (3). On the other hand, the prognosis for patients who have retinal findings of group 1 or group 2 hypertension without cardiovascular or renal complications is not so well defined; consequently, considerable disagreement exists among authorities as to which of these patients need treatment and which can be watched safely without specific hypotensive therapy. It appears obvious that treatment is more important for those patients in this group who have consistently high diastolic pressures than for those whose diastolic blood pressure is more labile. When doubt exists as to the advisability of treatment, it would appear reasonable that a trial of therapy be instituted. If it is found that the blood pressure can be reasonably well controlled with a minimum of unpleasant side effects, treatment can be continued indefinitely. In the final analysis, each physician must satisfy his own conscience in deciding to what extent a patient is to be inconvenienced by treatment for a disease causing no symptoms, but he also must assume the responsibility for close surveillance of those patients to whom he denies specific hypotensive therapy.

*Complicated Hypertension.*—Hypertension may be complicated by the presence of hypertensive heart failure, coronary atherosclerosis with or without myocardial infarction, cerebrovascular insufficiency with or without cerebral infarction, cerebral hemorrhage, and renal insufficiency. True hypertensive headache is considered to be a symptom and not a com-

plication of hypertensive vascular disease, for, unlike the other factors, it apparently has no bearing on prognosis.

**CONGESTIVE HEART FAILURE.**—When hypertensive heart disease has led to congestive heart failure and there are no overt signs of coronary insufficiency or recent myocardial infarction, prompt reduction in blood pressure is indicated. The ganglion-blocking agents usually are the drugs of choice in such cases, since they have a specific effect in reducing central venous pressure.

**CORONARY INSUFFICIENCY.**—Many hypertensive patients who have coronary insufficiency and angina pectoris derive considerable symptomatic improvement from treatment of their hypertension. Wide fluctuations in blood pressure and excessive hypotension should be strictly avoided in such patients. It is probably inadvisable to reduce the blood pressure of patients who have had myocardial infarction within the previous 6 weeks unless the blood pressure is extremely high and causing cardiac embarrassment. After the acute phase of the infarct is passed, administration of hypotensive agents can be started cautiously. Since hydralazine increases cardiac output, it may accentuate the symptoms of coronary insufficiency and should be used charily in patients with this complication. When Rauwolfia or a ganglion-blocking agent is used in conjunction with hydralazine, the latter is less likely to cause exacerbation of symptoms of coronary insufficiency.

**CEREBROVASCULAR INSUFFICIENCY.**—Patients with cerebrovascular insufficiency usually tolerate gradual and cautious reduction of blood pressure without manifesting increased symptoms of cerebral ischemia. It is occasionally advisable to start anticoagulant therapy for such patients before an attempt is made to reduce the blood pressure. This is also true for patients who have symptomatic coronary insufficiency. Attempts at reduction of blood pressure in the acute stage of cerebral infarction are usually ill-advised.

**CEREBRAL HEMORRHAGE.**—This catastrophe is usually an indication for prompt and drastic reduction of blood pressure, at times to hypotensive levels.

**RENAL INSUFFICIENCY.**—Renal insuffi-



ciency with azotemia is a relative contraindication to the treatment of hypertension, for all too often reduction of the blood pressure apparently further impairs renal function rather than benefiting it. This is especially true when the blood urea is more than 150 mg. per 100 ml. and when causes of prerenal azotemia, such as dehydration and congestive heart failure, are not present. Nevertheless, it is well recognized that the prognosis is so uniformly poor when azotemia complicates hypertension that a cautious trial of treatment can be justified if the patient or his family understands the perils and hazards.

#### COMMON ERRORS IN THE TREATMENT OF HYPERTENSION

Three common errors frequently are committed with respect to the use of newer hypotensive drugs.

*Inadequate Treatment.*—Until more is known about the cause and pathogenesis of essential hypertension, the only criterion that physicians presently have for the success or failure of treatment is the blood pressure itself. Treatment should be pursued until the blood pressure is brought under satisfactory control or until the patient cannot tolerate effective doses of the medicaments, no matter how artfully they are combined. So far as is presently known, no virtue exists in ineffective doses of hypotensive drugs. If the blood pressure is not reduced, treatment is a failure and should be appropriately modified or abandoned.

*Cessation of Effective Therapy.*—Despite the rapid advances made in the field of antihypertensive therapy in the past 10 years, clinicians still have no drug that cures hypertension. This means that if the blood pressure is to be controlled, medication must be continued indefinitely. It is a grievous error in the treatment of hypertension to discontinue medication when the blood pressure becomes normal, for almost inevitably it will increase again when medication is withdrawn.

*Use of Combination Tablets.*—Although combinations of drugs are frequently employed for adequate control of hypertension, the use of single tablets that contain combinations of drugs is to be deprecated, for this deprives the physician of his ability to make precise adjustments in

the dose of one agent without simultaneously changing that of others. Individualization of the therapeutic regimen for hypertension is the secret of success, and tablets containing two or more hypotensive agents lack the adaptability that is so essential.

#### SUMMARY

The modern treatment of hypertension is a source of hope to the hypertensive patient and of enthusiasm to the clinical investigator. With proper manipulation of the newer drugs, it is now possible to control the hypertension of most patients. It is astoundingly gratifying to see regression of the retinopathy of malignant hypertension and to note recession of cardiomegaly, with concomitant symptomatic improvement in cardiac function, as blood pressure is reduced. But in this enthusiasm, physicians must recognize the shortcomings and disadvantages of medical treatment as it exists today. It is expensive, time-consuming for patient and physician, and it is only palliative, not curative. It requires considerable intelligence and co-operation on the part of the patient and meticulous attention to details on the part of the physician. Unpleasant side effects often make it difficult to maintain the blood pressure in the desirable ranges. These disadvantages and shortcomings should not deter physicians from using hypotensive drugs when indicated but rather should keep them looking for better ways in which to deal with the menace of hypertension, because the new hypotensive drugs, effective as they may be, are but heralds of a brighter and perhaps not distant day when hypertension will cease to take its toll in human lives and suffering.

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# The Early Diagnosis of Congenital Hypothyroidism \* \*

THEODORE C. PANOS, M.D.\*

Pessimism regarding the prognosis of intellectual development in congenital hypothyroidism, under presumably adequate therapy, has become traditional. With rare exceptions (1), reports of the past several decades, dealing usually with small numbers of patients, have emphasized the discouraging infrequency with which normal intelligence is achieved, in contrast to the striking effects on physical growth. Recently, on the basis of the most extensive follow-up yet reported (111 cases), Wilkins and associates have presented conclusive evidence that the outlook in cretinism need not be so bleak as might be expected, provided adequate therapy is instituted during the early months of life (2). Even the most severe forms responded well when treatment was begun within the first 6 months. A plea is made for improvement in earlier diagnosis and adequate therapy.

It is the purpose of this communication to emphasize the frequency of very early onset of symptomatology and to delineate the nature and sequence of appearance of the early manifestations, many of which are common to other derangements of infancy. It is a trite observation that early diagnosis depends on critical clinical observation and a "high index of suspicion." Once aroused, the suspicion of cretinism can, fortunately, in these days, be quickly confirmed by well-known specific tests (e.g., serum protein-bound iodine or butanol-extractable iodine).

Table 1 depicts certain characteristics of 17 consecutive cases of congenital hypothyroidism studied at the Children's Hospital of the University of Texas Medical Branch. A more detailed analysis of 15 of these cases has appeared elsewhere (3). Particular mention should be made of the fact that in no instance could evidence of hypothyroidism in the mother

TABLE I  
Congenital Hypothyroidism

Number of cases .....	17
Male .....	7
Female .....	10
Age at onset	
Before one month .....	11
1-3 months .....	3
4-6 months .....	3
Frequency of signs and symptoms	
Feeding difficulty .....	14
Lethargy .....	11
Constipation .....	11
Puffy facies .....	11
Enlarged tongue .....	11
Abdominal distention .....	10
Hoarse voice .....	8
Sensitivity to cold .....	5

be adduced before, during or after pregnancy.

In 11 of these 17 patients, the first indication of thyroid deficiency definitely appeared before the age of one month. This observation belies the commonly-held impression that a cretin is regularly normal for the first several weeks or months of life as a result of temporary protection from transplacentally acquired thyroid substance. The onset occurred at birth or within a few days of birth in 7 infants, and was characterized by pronounced lethargy in all, accompanied by difficulty in swallowing in 5 and difficulty in sucking in 3. Such a clinical picture, especially under the circumstances of recent birth, is strongly indicative of intracranial damage, which indeed was the initial diagnostic impression in several of these instances. It is apparent that congenital hypothyroidism must be considered in the differential diagnosis of intracranial disease of the newborn.

Although certain details of the present illness were lacking in some instances, a definite pattern of frequency of signs and symptoms can be established. Feeding difficulty was conspicuous in 14 patients and was the first abnormality noted in

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eight infants, the second in five. It was more severe the earlier the onset; i.e., in 8 of the 11 with onset of symptoms before one month, inability to swallow and/or suck constituted the chief presenting problem. In those with slightly later onset, difficulty was described as "slow eater," "poor eater," "nurses poorly." Feeding by gastric tube was necessary in six patients. The complaint of failure to gain weight was, of course, closely associated with that of feeding problem, and figured prominently in those patients with slightly later onset (1-6 months).

Lethargy and apathy were observed to follow closely the onset of feeding difficulty in seven instances, but preceded the appearance of difficulty in feeding in two. Constipation was usually the next to develop, although it was the first abnormality noted in 3 infants (all with onset after one month of age) and second in two; in combination with abdominal distention, the clinical picture can be easily confused with intestinal obstruction of early infancy, as has occurred on at least one occasion.

Following the development of feeding difficulty, lethargy and constipation, there appeared in fairly rapid progression puffiness of the eyes and face, enlargement of the tongue and hoarseness of the voice. In at least two infants, the so-called full-blown cretinoid facies was well developed by age of one month, and in two cases, enlargement of the tongue was noted at birth. Sensitivity to cold was specifically mentioned by the parents in five instances. Characteristic changes in hair texture was much less frequently observed than changes in skin texture.

Miscellaneous observations which aid in stimulating suspicion of cretinism are illustrated by the following examples: (1)

an infant was examined at the age of one month regarding the chief complaint of "yellow jaundice" and was found to have the carotenemic discoloration which is characteristic of hypothyroidism and which spares the sclerae; (2) two infants were treated for persistent, severe anemia with blood transfusion and hematinics during the first few months of life before the diagnosis of cretinism was made. Also, prolongation of icterus neonatorum for as long as three months has been observed in cretinism and such prolongation may be one of the earliest manifestations of this disorder. Thus, at least in an occasional case, the consideration of cretinism must enter into the differential diagnosis of jaundice and anemia (especially normochromic, normocytic) of early infancy.

The occurrence at birth, or shortly afterward, of evidence of cretinism has, of course, been reported. However, the frequency with which such early evidence can be identified has not been sufficiently emphasized. The prospect of vastly improving the prognosis of intellectual development by establishing early and adequate therapy makes the heightened awareness of the early manifestations of congenital hypothyroidism of particular importance.

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# Medicine in South America

EUGENE H. CRAWLEY, M.D.\*

Far back into the dawning days of Egypt, medicine and its practice has varied very little, even to the present time and in every land. Physicians are united in the common cause of treating the ill and improving the health of their patients. It is true that the degree of success varies with the environment, but the goal is the same. This can be said for our colleagues in South America. They are confronted with the same problems that we in North America have or have had and as many different ones peculiar to their specific areas. In every city that I visited, medicine in the United States was met with praise and admiration. Everyone seemed to be looking to North America to mark the way in nearly every field of endeavor. This does not mean that they are willing to accept everything we have to offer. In every country there are brilliant physicians who have been well trained and are informed of medical progress all over the world. Most physicians are able to read journals in two or three languages, since many textbooks and classes are taught in English as well as Spanish or Portuguese. Languages are emphasized more in the premedical training courses than here. This gives them access to more information. Nor does it mean that Latin American physicians are better trained than those of the United States. Nearly every physician with whom I talked expressed a great desire to come to the United States for more study and training. Our technical advances in equipment and teaching facilities are beyond anything that Latin America has to offer at this time. But at the present pace of progress with a few years of political peace in South America, they will be able to meet us on an equal terms in many fields of research and teaching facilities. Then it may be desirable for us to go to South America for certain special studies, such as tropical medicine, metabolism diseases and pharmacology.

As to government control of medicine, and socialistic programs of free medicine for certain groups, there have been inter-

esting projects all over Latin America. We can profit by their mistakes and could learn much for our defense in warding off such social meddling and muddling by government agencies at everyones expense, especially the patient. It was consoling to learn that private medicine as we know it, was thriving and held with the highest esteem in every country that I visited, which included six of the largest countries of South America. Venezuela seemed to have the greatest shortage of physicians and to be doing the most active private practice, as well as having the highest cost of living. This was especially true in the large cities. In this booming modern country, facilities seemed to be the greatest difficulty. We still must reckon with time in training people to work in the field of medicine. No matter how large our hospital building may be, we do not have a hospital until we have physicians, nurses, and other trained workers. As examples, I saw three hospitals of six hundred to twelve hundred beds that were unoccupied or only partially occupied, due to lack of personnel to run them, primarily. In every country there was a National pride and strong effort being made to improve their health conditions and plans were being made for developing and in improving facilities to provide for the local needs. Yes, they too had their problems with political graft, bureaucracy, and obstruction, as well as the old story of lack of funds and inertia. It was wonderful the progress that has been made in some nations in view of their political history. Their physicians deserve the greatest of praise for maintaining high standards in the face of such great obstacles. I wondered how well we would stand the test under the pressure of an antagonistic force of a police state. It was stimulating to meet men who had been imprisoned and tortured because they had expressed opposition to those holding power. What a great treasure we have in the freedom of expression and how easily it can be taken from us. I have faith in the physician and the ideals which guide him. Physicians' aims and

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ethics are still the same for the past four thousand years though nations of the highest caliber have had their day and are now forgotten ruins in the deserts of the earth.

Enough of generalities and down to the specific observations. First on the tour was the little republic of Panama, split down the middle by Uncle Sam's big ditch. This would be comparable to Canada administering the affairs along each side of the Mississippi River from the Great Lakes to Gulf of Mexico with the rights of a sovereign government. In addition to that all the communications would be in French. The very thought is intolerable to us. We can begin to understand some of the feelings of Panama though our relations with the little country has always been good and friendly. Medicine in Panama is on an individual basis with no state projects at present. My inquiry concerning government hospitals in the canal zone brought some uncomplimentary remarks from the laymen and how they preferred a private physician to the assembly line methods and lack of consideration of the individual patients in government hospitals — sounds familiar? Public Health in Panama both in the Canal Zone and the republic has made this nation one of the most healthful countries in the world and is a source of mutual pride illustrating that private medicine can work harmoniously with community health agencies to the benefit of all.

Peru, the history book land next came into the focus of my attention. In spite of all the great natural gifts that this fabulous country has made to modern civilization such as the potatoe, lima bean, cotton, quinine, cocaine, and twenty other food crops, we still know very little generally about this South American republic. The people of Peru, however, were much better informed concerning the United States utilizing the same syndicated news services as we read in our daily newspapers. Yet this was a land of many problems in communication and travel, high mountains, deep valleys, deserts, and tropical jungles, with a climate that varies from tropical to within a few hundred miles and a population that was over seventy per cent native Indian stock.

For many common reasons this nation has made experiments in government medicine, in the form of hospitals for patients carrying insurance underwritten by the government, this included employers as well as employees. There were also charity and private hospitals. They were all well attended by patients, but those that I visited had a shortage of nurses and physicians. Children were admitted to only the childrens hospital and private clinics. All hospitals complained of a shortage of laboratory facilities. Due to the large numbers of low income groups and the influx of people from the country all health facilities were greatly overloaded. There I saw marasmic babies in large numbers requiring months of hospitalization. In spite of great problems the physicians were optimistic and were making plans to improve their situation. Private practice was similar to ours and with comparable fees and a very low income tax.

To the south of Peru is the long and narrow Republic of Chile. This little country presents a different economy, a different people and a much different climate. In this little country they had government hospitals a form of socialized medicine in progress. This consisted of government hospitals and clinics attended by physicians for specific hours daily, caring mainly for the working class and the very poor. For this service the physicians received a very small salary depending on their training and period of service. The rest of the day and the night was their own time to practice in their offices or private clinics of which there were many. Medicine in this friendly little republic was practiced much in the European manner, especially Germany during its peak. There was a profound interest in medicine of the United States and much admiration but as most physicians read more than one language they did not accept all that we presented and were very discriminating as well as slightly more conservative than we tend to be. How well they liked their system can be summed up in the statement of one pediatrician—without his private practice he did not eat. This meant a great amount



of work in a poor country with a struggling economy.

Across the great wall of the Andes from Chile we visited the great Country of Argentina and its beautiful capitol of Buenos Aires. Again we found a nation rich in natural resources and a vigorous industrious people that were economically anemic, from too many years of bad government. Here the practice of medicine had suffered also. There were many beautiful hospitals and well trained physicians but there were many other poorly trained physicians from a government medical school that has sacrificed standards for numbers with no attempt to select and train the men well. This was only a part of the problem. There was only one childrens hospital in Buenos Aires and one laboratory handled all the clinical laboratory work for all the hospitals in the city. However there were private hospitals, called sanatoria that had their own laboratories making private medicine easier. The men with whom I talked in Argentina assured me that there was plenty to do for the men who wanted to work and were well trained to do their jobs.

Brazil is a country much larger in size than ours. It is a growing, developing and maturing nation that is struggling to be recognized by the world. They are our friends and feel that they occupy an equal place with the United States in the world and they are struggling to prove it. Considering their natural resources and size and the zeal of the people to expand and develop, they will in not a few years attain some measure of that goal. All of this may be said of medicine of Brazil. There is yet much to be done in medicine as there is in all phases of life in Brazil. In every field there is a strong effort to become self-sufficient. There is a great pride in pointing out these efforts and the progress that is being made in making the nation stand on its own feet. The feeling is so strong that it makes the visitor join in the enthusiasm and admire the progress that is being made.

Across thousands of miles of jungle and unexplored, undeveloped land, mostly inside the boundaries of Brazil, the airline dropped down on a little shelf of land above the Caribbean Sea and beneath the mountains of Venezuela, this was the first introduction to a country rushing with development and progress nurtured by the magic product petroleum. Everywhere there was building and construction of not one or two stories but ten to fifteen in the most advanced forms of contemporary architecture. This seems to be one of the few nations that had plenty of money to spend for community improvements in the form of slum clearance, roads and public buildings. This was one nation that seemed to have a shortage of physicians. One of the largest hospitals in South America was only half occupied although private hospitals seemed well attended.

Latin America is the frontier of the future both in medicine and in the economic world. Our South American colleagues recognize their problems and the needs of their particular countries and are making efforts many times in the face of extreme difficulties to bring up the standards of health. They are eager for better training and better facilities both of which we have to offer. They are wary of outright gifts and are quick to point out that they desire our knowledge and skills in order to manage their own specific problems themselves. We are the recognized leaders in the world of medicine and have the best to offer from our research centers. It seems that a great service can be done by making more facilities available, to these physicians that can meet our qualifications. This would not only improve our relations with our neighbors to the south and improve our position as a leader, but would enable these nations to help themselves, using their own available resources. Certainly the desire for more knowledge and technical skill should not be denied or interpreted as a request for charity. Let us re-evaluate and consider a good investment in the future of medicine of South America.

# ◆ *What's* NEW ◆

## Operative Orthopedics

HORACE R. MURPHY, M.D.\*

In orthopedic surgery the innate desire of man to mend or repair materializes in a myriad of mechanical devices. The screw and plate, the threaded and unthreaded pin, the various replacement prostheses—all have their stout advocates. In recent years it would appear that surgery on bone and joint injuries has increased. Have superior techniques evolved or has conservative treatment proved inferior? The busy practitioner in these changing times may find himself confronted with a situation in which it is difficult to decide whether operative or non-operative means would best benefit the patient. The apparent dilemma might resolve itself if certain principles are considered.

For example: Non-osseous or ligamentous joint injuries. The smooth cartilage-covered surfaces and underlying bone are intact but complete disruption of a stabilizing ligament has occurred. If gross and obvious instability is present accurate resuture of the disrupted ligament is indicated. A complete acromio-clavicular separation (1), the unhappy triad of O'Donoghue (knee injury with tear of the medial meniscus, anterior cruciate, and medial collateral ligament) (2) and severe ligamentous injuries of the ankle fall into this category. (3) On the other hand, ligamentous injuries pin-pointed by local tenderness and pain on joint motion but without joint instability may be treated successfully by plaster immobilization.

Osseous joint injuries involving large fragments of bone and surface incongruity which are suitable for mechanical fixation should be operated. The type of fixation device is important only in that it perform most efficiently. The therapeutic

goal is restoration of joint congruity. (4) Particularly is this true in the weight bearing joints, the hip, knee, and ankle. A displaced fracture of the medial malleolus (abduction type of mechanism) treated by closed reduction is subject to a 25-35 per cent non-union rate. (5) Open reduction of the medial malleolus with screw fixation is a relatively simple procedure and practically assures union. A congruous, stable joint is thereby established.

The indication for surgery is not so well defined in treatment of the long bones. The hanging cast is still the best treatment for most fractures of the humerus. (6) Open reduction is generally not indicated. The femur, sheathed by heavy blood bearing muscles, unless it is severely comminuted, is well treated by the medullary nail. (7) Non-union is practically unknown and the patient may return to work, in certain instances, in 8 weeks. The body spica, with its disabling residuals of joint stiffness and muscle atrophy, should be in most cases relegated to the past.

Of the long bones the tibia is the most treacherous. Its accessibility invites surgery; its relatively poor blood supply, particularly in the lower  $\frac{1}{3}$ , invites infection and non-union. Although good results have been reported following the use of medullary nails or screws (8) closed reduction and careful plaster application produces excellent results. (9) Plaster technique is all important. Forearm fractures in the adult still present a considerable problem. (10) Closed reduction in the mid-shaft and proximal  $\frac{1}{3}$  is sometimes difficult to achieve and often more difficult to maintain. Open reduction with plate fixation of the radius and med-

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ullary nail fixation of the ulna is probably the current method of choice but failure to unite is not uncommon in the radius. Some restriction of pronation or supination is the rule rather than the exception.

In summary, ligamentous joint injuries with instability should be operated. Joint injuries with surface incongruity should also be operated if fixation is possible. The clavicle, the humerus, and the tibia do well treated by closed reduction. Open reduction of the femur, radius, and ulna usually gives superior results.

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**A TEACHING SEMINAR**  
**FROM THE**  
**UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE**

## Pyelitis in Pregnancy

### *A Clinical Review*

EDWARD POPP, PH.D., M.S.\*

Pyelitis is a clinical syndrome in which there is bacterial infection of the kidney pelvis with minimal involvement of the kidney parenchyma and ureters. Several factors seem to be important in the development of this syndrome. Of these, obstruction stasis, and bacteria seem most important.

Obstruction to urinary flow with the resulting hydronephrosis and urinary stasis is almost a prerequisite for urinary tract infection. Every gravid woman shows urinary tract changes ranging from slight dilatation to a high degree of hydronephrosis and hydroureter, and with these changes there is a varying degree of urinary stasis. The cause of this dilatation has been ascribed to many things. The most acceptable causes are 1) atony or hypoperistalsis of the urinary tract due to the inhibiting influence of progesterone; 2) induced hypertrophy of the lower ureteral segment due to estrogens; and 3) pressure of the gravid uterus against the ureters as they cross the pelvic brim.

Hundley and his associates showed in 1938 that bacteria are present in the urine of healthy women. These investi-

gators cultured catheterized urine samples using brain broth and blood agar. In healthy non-gravid women, 44 per cent were positive on brain broth and 18 per cent on blood agar. Urine samples from the healthy gravid women yielded positive results 64 per cent of the time on brain broth and 36 per cent on blood agar, thus demonstrating increased incidence of bacteruria in gravid women.

The organisms may get to the upper urinary tract by way of an ascending infection from the bladder, but according to most authorities, the most likely route is by way of blood and lymph channels. For the latter to occur, the organisms would be expected to come as a complication of an acute infection, or to originate from various infections foci such as the teeth, tonsils, sinuses, gall bladder, or gastrointestinal tract. In some patients there is an exacerbation of a latent or chronic form of pyelitis acquired during childhood or a previous pregnancy.

In essence, then, there are three factors which are important in pyelitis: 1) dilatation of the urinary tract; 2) urinary stasis; and 3) presence of organisms.

#### STUDY

In order to study pyelitis of pregnancy, the records of all cases treated at the University of Arkansas Medical Center between January 1950 and December 1956 were reviewed. There were 402 such records, and the last 100 consecutive cases were selected for detailed analysis. From this study, data on the clinical picture, bacteriology, and management were obtained.

\*Senior Medical Student, Class 1958

NOTE: "Teaching and Research" is a many faceted thing . . . beautiful in its completed form but composed of many elements, many disappointments, a few triumphs, and much of the mundane daily effort. One of its most important aspects is the sophisticated "scholarly approach" concept, represented by the inquiring mind, the pursuit of investigation, and the synthesis of a concept.

The Department of Obstetrics and Gynecology utilizes research in its teaching effort, as each senior student pursues a research topic. This seminar paper (abstracted for publication) is an example of the combination of teaching and research. This project, devised and accomplished by a senior student is presented here both because it reflects a methodology of teaching and learning, and because it is clinical informative.

Urinary tract infection in gravid women is a frequent and important clinical entity. The paper delineates the clinical and bacteriological aspects of this syndrome.

Willis E. Brown, M.D.



RESULTS

Pyelitis occurred 402 times in the 14,659 births between January 1950 and December 1956—or an incidence of 2.8 per cent. This compares with an incidence of 1.2 per cent reported by McLane, and probably reflects the large number of referral patients at the University of Arkansas Medical Center. Kretschmer at Presbyterian Hospital, Chicago, reported an incidence of 0.05 per cent, obtained by insistence upon a large consumption of water, the avoidance of constipation, and the elimination of foci of infection.

An analysis of the most recent 100 cases showed an average age of 23 years, and that 81 per cent of the patients were multipara. Thus this is a disease of the young multigravida. In 11 per cent, the pyelitis was recurrent. These figures are similar to the report by McLane from Cornell. (Table I)

Table I  
INCIDENCE OF PYELITIS OF PREGNANCY

	UAMC	McLANE
Births (Jan. 1950-Dec. 1956)	14,659	14,000
Cases of Pyelitis	402	168
Incidence	2.8%	1.2%
Average Age (Range 14-43 yrs.)	23	
Parity (Range 0-11) Average	3	
Multiparous	81%	51%
Nulliparous	19%	49%
Recurrent Pyelitis	11%	10%

This infection shows an increasing frequency as pregnancy advances, there being only 5 per cent in the first trimester and 32 per cent in the third trimester. In 39 per cent of the patients, the infection appeared in the puerperium, thus casting some doubt on the role of the mechanical pressure of the gravid uterus. (See Table 2)

Table II  
DISTRIBUTION IN PREGNANCY

	UAMC	McLANE
Cases Studied	100	168
1st Trimester	5%	2%
2nd Trimester	24%	21%
3rd Trimester	32%	35%
Intrapartum	0	5%
Postpartum	39%	37%

The clinical symptoms during the acute attack include chills and fever of a septic type, sometimes vomiting, pain in the loins and along the ureter, and cystitis with dysuria and frequency. Physical findings are temperature elevation, costo-vertebral angle tenderness, and considerable pain elicited on palpation of the kidney. On vaginal examination, the ureter can occasionally be palpated and is thickened and exquisitely painful to touch. The white blood cell count is increased to around 15,000, and a microscopic examination of the urine reveals numerous clumps of white cells and the presence of bacteria. (See Table 3)

Table III  
CLINICAL PICTURE

Total Cases for Detail Study	100
Pain, Number of Cases	58
Right CVA	32 (55%)
Left CVA	9 (17%)
Bilateral	17 (28%)
Fever, Number of Cases	94
Duration (1-20 days) Ave.	4 days
Urinary Findings	
Pyuria, Cases	100
Bacilluria (Slide Only)	11
Positive Cultures	67

The chronic form of pyelitis may exhibit no subjective symptoms, and may be detected only by history or by the finding of clumps of white cells and bacteria in the urine. These silent chronic infections are probably responsible for the 11 per cent recurrent cases.

According to the literature, the offending organism is *Escherichia coli* in approximately 90 per cent of the cases, while in the remaining 10 per cent of the cases, a large number of organisms, including the *Streptococcus*, *Proteus*, *Aerobacter*, and *Pseudomonas* groups are included.

An analysis of the bacteriology of the University of Arkansas Medical Center cases reveals a similar distribution of organisms. Of the 100 records studied, 11 showed bacilluria on the slide only, cultures were obtained in 78 cases, and in 11 cases no record of bacteriology is avail-

able. Sixteen of the cultures were sterile or not reported. In 37 cases, a single organism was found, most commonly the *Escherichia coli*, and in 25 cases there were multiple organisms found. (See Table 4)

Table IV  
URINARY FINDINGS

Total Cases for Detail Study	100
Pyuria	100
Bacilluria (Slide Only)	11
Cultures Obtained	78
No Growth	11
No Report	5
Single Organism	37
Multiple Organisms	25
Organisms Cultured	
<i>E. coli</i>	51%
<i>A. aerogenes</i>	33%
Gamma <i>Streptococcus</i>	30%
<i>M. Aureus</i>	13%
<i>Proteus</i> Sp.	8%
<i>Fecalis</i> Sp.	5%
Miscellaneous*	3%

\*This group consists of one culture each of *P. Aeruginosa*, *B. subtilis*, and beta *streptococcus*.

The treatment of pyelitis of Pregnancy at the University of Arkansas Medical Center centered around the use of chemotherapeutic agents for the reduction of bacterial population and large fluid intake (up to 3000 cc. per day) to obviate urinary stasis. Prior to the initiation of treatment, a catheterized urine specimen was obtained for culture and sensitivity studies. In this series, fluids only were used in 4 cases, fluids and the several antibiotics in 95, and in 1 patient ureteral catheter drainage was required. (See Table 5)

Table V  
TREATMENT

Total Cases for Detail Study	100
Fluids Only	4
Gantrisin+Fluids	71
Antibiotics+Fluids	10
Gantrisin+Antibiotics+Fluids	14
Catheter Drainage	1

If the treatment was successful, a good response was obtained within two days. If the response was slow, the bacteriology

report on organism sensitivity was available and the specific drug to which the organisms were sensitive was employed. Persistence of the organisms in the urine after 3 to 4 days usually signifies the development of bacterial resistance of the presence of some type of obstruction.

The prognosis in acute pyelitis is good, the acute attack lasting from 10 days to 3 weeks and the chronic attack lasts a few weeks longer. In our series the attacks lasted from 1 to 20 days with an average length of 4 days. Occasionally some patients show persistent dilatation and bacteruria for some months following an acute attack, and may develop the silent chronic form of pyelitis. For this reason, these patients should be carefully followed during the months and years following the pregnancy.

The outlook for the baby is generally very good. Occasionally there is a spontaneous interruption of the pregnancy with death of the fetus. There were 5 fetal deaths associated with and probably attributable to the pyelitis, 2 as previable abortions and 3 as stillborn at or near term. (See Table 6)

Table VI  
FETAL OUTCOME

Total Cases for Details	100
Pre-viable Abortions	2
Term Stillborn	3
Premature (Toxemias 5)	7
Term Viable Child	49
Postpartum Pyelitis	39

It is of interest that both of the abortions and one of the term deaths occurred in non-registered patients, and in 3 of the 5 patients poorly regulated diabetes also played a part. In 1 patient, an associated abruptio placenta further compromised the issue. (See Table 7)

Thus it is difficult to say that the infection was a significant factor in the fetal death, although it undoubtedly played some role.



Table VII  
DETAIL STUDY OF 5 FETAL DEATHS

Patient	Reg. or Non-Reg.	Length of Gestation	Associated Disease	Occurrence of Pyelitis	Remarks
.....P.	Non-Reg.	3 mo.	Diabetic — not well controlled.	Had many episodes of urinary tract infection.	
.....C.	Non-Reg.	6 mo.	None	Postpartum Pyelitis	Fell, struck abd. 3 wks. prior to adm. Had 3 days bleeding followed by foul white discharge lasting 1 wk. No fetal movements felt for 1 wk. prior to admission.
.....A.	Non-Reg.	Term	Diabetic — not well controlled. Semi-comatose on admission.	3 wks. pre-partum	Fetal heart tones heard on adm. Pt. went into spontaneous labor and FHT not heard.
.....C.	Reg.	Term	Diabetic—pre-eclampsia	Postpartum pyelitis	Hypotensive episode (BP 80/60) after saddle block administered.
.....T.	Reg.	Term	Pre-eclampsia with previous pregnancy.	Postpartum pyelitis	Adm. to hosp. in good labor but FHT not heard. One-half of placenta infarcted.

SUMMARY

In summary, the data on 402 cases of pyelitis in 14,659 births which occurred at the University Medical Center between January 1950 and December 1956 has been presented.

The incidence of pyelitis was found to be 2.8 per cent, with the highest number of cases being presented during the third trimester of pregnancy and postpartum. A large number of different organisms were cultured from the urine of these patients. Prompt treatment with large fluid intake and chemotherapeutic agents brought about marked improvement within an average of 4 days. There were no maternal deaths, and only 5 fetal deaths associated with pyelitis in the most recent 100 cases studied in detail.

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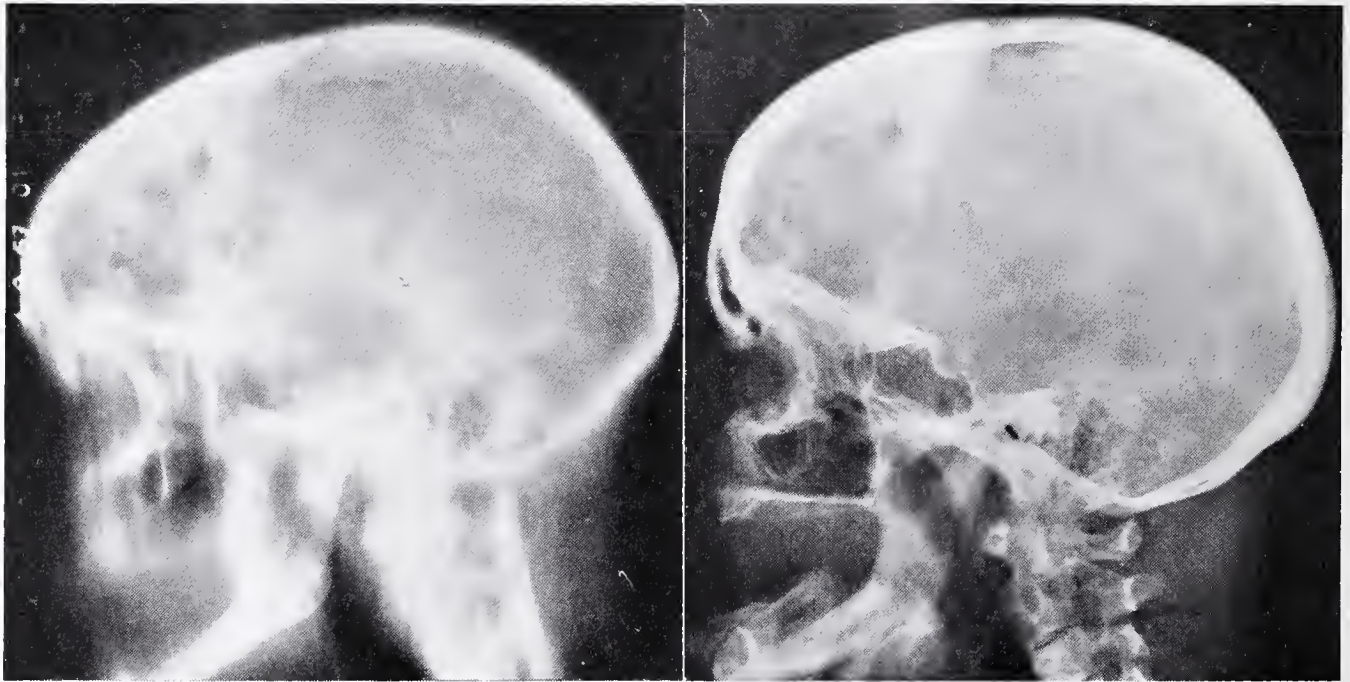
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# What Is Your Diagnosis?



**CLINICAL DATA:** CC: 16 months prior to admission noticed burning, stinging sensation in left temporal region radiating into her occiput. After episodes of severe pain noted dark shadows under eyes. Has noted some photophobia of late and decrease in visual acuity for one year. P. E. Only unusual findings were generalized mild lymphadenopathy with nodes up to  $\frac{1}{2}$  cm. in axilla but not hard or fixed.

**LAB DATA:** Hgb 13.84. White count 5,700.

**FOR ANSWER SEE PAGE 52**



## SYNCOPE

ALFRED KAHN, JR., M.D.

The study of syncope has been a very beneficial investigation. Not alone has it added to our fundamental knowledge of central nervous system reflex mechanisms but it has also given us an insight into certain problems vital to aviation and space medicine. Syncope in an aircraft travelling at high speed or even in an automobile in heavy traffic could well result in disaster.

Perhaps the best of the earlier clinico-physiological investigation of this subject was done by the late Soma Weiss and his associates (Carotid Sinus Reflex in Health and Disease, Medicine, Vol. 12, p. 297, 1933). In his studies, Weiss was particularly interested in the carotid sinus and demonstrated syncope associated with a change in heart rate, change in blood pressure and one variety without either blood pressure or cardiac change.

Engel (Fainting, Physiological and Psychological Considerations, by G. L. Engel, C. L. Thomas Publishing Co., Springfield, Ill., 1950) has summarized much of our modern knowledge. He points out there are three basic mechanisms for all types of syncope: altered cerebral metabolism due to circulatory disturbances, altered cerebral metabolism due to metabolic factors, and psychological mechanisms. Perhaps the most common type of syncope is due to fall in the arterial blood pressure; a variety of things may acutely produce this as tissue damage, anoxemia, pain, decreased blood volume, etc. Repeated fainting in the upright position is known as orthostatic hypotension. This is seen in convalescence, poor postural reflexes, venous defects in legs, etc. Patients may also faint from cardiac standstill, cerebral vascular disorders, disturbance in cerebral metabolism as anoxemia or anemia, hyperventilation, hysteria and cardiac disease.

Engel's discussion on the work-up of a patient with syncope is good. In addition

to the usual history, physical examination, and laboratory studies, he recommends a few special tests. For example, the patient's reaction to posture may be valuable; most patients can stand 15 or 20 minutes when tilted up to an angle of 65 degrees from the horizontal. The patient may be tested for anoxemia; most people can stand an altitude to 18,000 feet without loss of consciousness. Carotid sinus stimulation does not greatly affect most people. Hyperventilation should be performed. The patient should also have an electrocardiogram to determine cardiac disease. The electroencephalogram is helpful particularly if run during syncope induced by one of the above methods. If true syncope occurs, large, slow waves appear. It is also valuable to examine the effects of exercise on these individuals.

The treatment of syncope is to treat the cause. Even if the pathogenetic factors are discovered successful therapy is not easy. For example, many remedies have been tried in orthostatic hypotension without singular success; tight bandages on the legs, ephedrine, parendrine, etc., work on some patients but there is no consistent pattern. On the other hand, anoxemia, chronic anemia and hypoglycemia can usually be readily remedied. Adams-Stokes attacks and cerebral vascular disorders represent a further difficult therapeutic category. Perhaps these examples highlight the absolute necessity for a proper investigation to find the cause of syncope rather than to blindly treat. For a convenient physiological catalog of syncope the reader is referred to Sharpey-Shafer's work (British Medical Journal, Vol. 1, p. 506, March 3, 1956).

The treatment of syncope due to carotid sinus syndrome is denervation of the sinus. Ordinarily the right carotid sinus is dominant. The nerve supply comes from the branch of Herring of the ninth cranial nerve, the parasympathetic and

sympathetic systems. The carotid sinus can be denervated by stripping as described among others by Rosner (*Journal of Nervous and Mental Disease*, Vol. 124, p. 520, 1956). The ninth nerve can be cut. Denervation of the carotid sinus is not an innocuous procedure for at times fatal hypertensive crises occur (*Bull Johns Hopkins Hospital*, Vol. 100, p. 15, 1957). Bucy (*Archives of Internal Medicine*, Vol. 58, p. 418, 1936) has also discussed the interesting blood pressure rise after ninth nerve section.

Syncope is an interesting symptom produced by many body disorders and usually characterized by an acute decrease in cerebral blood flow.

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## CORRESPONDENCE

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March 11, 1958

Dr. James Kolb  
Chairman of Council of Arkansas  
Medical Society  
Clarksville, Arkansas  
Dear Jim:

As the representative of the Arkansas Medical Society at the recent conference on prepayment medical and hospital service sponsored by the American Medical Association Council on Medical Service and Committee of Prepayment Medical and Hospital Service in Dallas, Texas, I wish to make this report.

This meeting was held in Dallas on February 28, 1958, with Doctor Percy E. Hopkins of Chicago presiding. The meeting was well attended by representatives of a large number of state medical societies. The purpose of this meeting was to determine the problem areas in voluntary health insurance (both Blue Cross-Blue Shield and commercial carriers), the role of the medical profession in voluntary health insurance, the degree of control the medical profession should maintain over a medical society approved plan, and the future role of the A.M.A. in voluntary health insurance.

In general, the problem areas in voluntary health insurance appeared to be exploitation of the patient by many small-

er and less reputable insurance companies, lack of education by the public as to the purpose of health insurance, increased demands by organized labor for total and complete coverage of both hospital expenses and physician fees, and in some instances abuses by individual doctors and patients in over utilizing health insurance. It was almost unanimously agreed that the medical profession has a distinct obligation in trying to correct these problems, not only for the individual patient himself, but also for the good of the profession. The Forand Bill was mentioned frequently as the backdoor to socialized medicine, and it is felt that a strong voluntary health insurance program would be at least a partial answer to this type legislation.

It was felt that the medical profession should maintain a rather strong degree of control over a medical society approved plan, specifically referring to Blue Cross-Blue Shield.

The exact future role of the A.M.A. in voluntary health insurance was not discussed extensively, but it was hoped that information obtained at this conference would help the A.M.A. in establishing "guides" for voluntary health insurance plans. Close liaison between the A.M.A. and the National Health Insurance Council was discussed, and was felt that many facets of health insurance problems can be corrected by a cooperative effort between these two organizations.

This meeting was very informative and stimulating, and should result in improvements in the national voluntary health insurance program.

Sincerely yours,  
Sam G. Jameson, M. D.

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## ANSWER — What's Your Diagnosis?

From the Department of Radiology  
University of Arkansas Medical Center

SURGERY: 4/11/57 skull biopsy done and reported eosinophilic granuloma.

ANATOMY AND DIAGNOSIS: Skull—Eosinophilic granuloma.

X-RAY FEATURES: 4/8/57 skull films revealed lytic defect on left frontal bone given temporary diagnosis of eosinophilic granuloma. Patient given X-ray therapy. 7/15/57 Patient has no complaints.

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# Medicine in the News

## Orthopedic Meeting

Little Rock was the host to over 125 orthopedic doctors representing eight states while they attended the 5th annual meeting of the Mid-Central States Orthopedic Society in the University Medical Center in March. Dr. F. Walter Carruthers of Little Rock is the retiring president. Their new officers are Dr. W. P. Jenson of Omaha, Neb., president, and Dr. Henry Marsh of Wichita, Kan., secretary-treasurer.

## Visit by Council of Medical Education Committee

The University of Arkansas Medical Center has recently been visited by a committee of the Council on Medical Education. Members of this committee were Dr. Robert Glaser, dean of the University of Colorado Medical School; Dr. Dayton McKean, dean of the Graduate School of University of Colorado; Dr. Thomas H. Hunter, dean of the University of Virginia School of Medicine; Dr. Edward L. Turner, secretary of the Council on Medical Education; and Dr. Warde B. Allan, associate professor of medicine at Johns Hopkins University.

## WHAT HOUSE COMMITTEE RECOMMENDS FOR HEALTH EXPENDITURES

On March 25 the House Appropriations Committee approved its report on spending for the Department of Health, Education, and Welfare for the fiscal year starting on July 1. In the table below, the figures recommended by the committee are compared with current spending and with what the Bureau of the Budget had proposed. In left column are amounts available for the various activities this fiscal year, center column figures are what budget bureau earlier recommended to Congress, and right column what the committee agreed on. House passage of the bill is imminent.

Activity	Current Spending	Budget Bureau	Committee Recommends
Food and Drug Administration	\$ 9,300,000	\$ 9,410,000	\$ 9,300,000
Freedmen's Hospital	3,000,000	2,975,000	2,975,000
Howard University	4,212,000	4,334,000	4,186,000
Vocational Education	33,750,081	33,750,081	33,750,081
Vocational Rehabilitation	52,230,000	56,800,000	56,800,000
Venereal Diseases	4,415,000	4,400,000	4,400,000
Aid to States (Gen'l)	22,592,000	22,889,000	22,000,000
Tuberculosis	7,000,000	5,386,000	5,386,000
Communicable Diseases	7,050,000	6,200,000	6,200,000
Sanitary Engineering	12,640,000	12,815,000	12,725,000
Waste Treatment Works	45,000,000	45,000,000	45,000,000
Hill-Burton Program	121,200,000	121,200,000	121,200,000
Hospitals, Medical Care	44,399,000	44,309,000	44,730,000
Foreign Quarantine	3,876,000	3,983,000	3,983,000
Indian Health Activities	40,100,000	40,225,000	40,225,000
National Institutes of Health:			
General research and serv.	14,026,000	17,742,000	17,742,000
Cancer	56,402,000	55,923,000	57,423,000
Mental Health	39,217,000	37,697,000	40,397,000
Heart	35,936,000	34,712,000	36,212,000
Dental	6,430,000	6,293,000	6,543,000
Arthritis and Metabolic Disease Activities	20,385,000	20,592,000	21,092,000
Allergy and Infectious Disease Activities	17,400,000	17,497,000	17,997,000
National Libr. of Medicine	1,450,000	1,415,000	1,415,000
St. Elizabeth's Hospital	3,320,800	3,366,000	3,366,000
Maternal & Child Welfare	41,500,000	41,500,000	42,500,000

### Memorial Gifts to the Library Of the University of Arkansas School of Medicine

The librarian of the University of Arkansas School of Medicine reports an encouraging increase in the number of books and journals given to the library. The medical societies are urged to give memorials in the form of books and journals.

### Medicine—A Lifelong Study

The Second World Conference on Medical Education, scheduled to convene in Chicago, Illinois, August 30 to September 4, 1959 will consider the theme "Medicine—A Lifelong Study." This theme is the logical sequel to the 1953 London Conference at which undergraduate medical education was discussed.

The application of educational methods in efficiently and efficaciously aiding every doctor to increase his knowledge of medical science concomitantly with the

modern advances in medical science is one of the basic aims of the Program Committee. The scope of the program will include specialist training, the development of teachers and investigators and means by which the practitioner can avail himself of the newest findings for use in the medical care he gives his patients.

### Form Council for Health Care of the Aged

**Chicago** — The foundation was laid today by some of the most important organizations in the health field to solve the problem of the health care of the aged.

For this purpose the American Dental Association, the American Hospital Association, the American Medical Association, and the American Nursing Home Association announced the establishment of the Joint Council to Improve the Health Care of the Aged.



**HONORING 50-YEAR MEMBERS**—Honoring the Independence County Medical Society and the members of the Fifty Year Club, the Woman's Auxiliary entertained with an Open House at the Country Club in Batesville on March 30. The occasion marked the annual observance of Doctors' Day. The members of the 50-year club especially honored are reading from left to right: Standing, Dr. R. L. McCurry, Cash, Sec., 50-year Club; Dr. E. M. Gray, Mt. Home; Dr. R. L. Bone, Newark; Dr. V. D. McAdams, Cord; Dr. Paul Jeffery, Bethesda. Sitting: Dr. O. J. T. Johnston, Batesville; Dr. L. T. Evans, Batesville; Dr. O. S. Woods, Salem; and Dr. C. G. Hinkle, Batesville. Not present were Dr. M. S. Craig, Batesville, and Dr. J. L. Weathers, Salem.



Objectives of the council, the formation of which has been under consideration for some time by the sponsoring groups, were announced as:

"(1) To identify and analyze the health needs of the aged; (2) to appraise available health resources for the aged; and (3) to develop programs to foster the best possible health care for the aged regardless of their economic status."

The Joint Council to Improve the Health Care of the Aged is made up of three representatives of each sponsoring organization.

One of the first jobs of the council will be to determine exactly what are the health problems of the aged. Studies have been underway for the past several years by the organizations making up the council, but now, through joint efforts, research will be intensified and projects for meeting the problem will be activated as rapidly as possible. The council will be the agency through which the efforts of the sponsoring member organizations will be coordinated to solve the health problems of the aged.

### AMA Pamphlet on Driver Fitness

Before taking the wheel, every driver should check to make sure that he's fit to drive. Under certain circumstances — outlined in a new American Medical Association pamphlet — a driver can be a dangerous hazard on the road. "Are You Fit to Drive?" urges drivers to contact their physicians if they are in doubt about their fitness. Prepared by the AMA's Committee on Medical Aspects of Automobile Injuries and Deaths in cooperation with the Center for Safety Education at New York University, the booklet contains information about those conditions that can adversely affect driving skills — emotional upsets, driver attitudes, sleepiness, medicines, faulty vision, certain nerve and heart disorders, diabetes, old age and drinking.

For distribution through physicians' offices, the booklet currently is available from the Association of Casualty and Surety Companies, 60 John Street, New York 38, N. Y. Price is \$4.60 per 100 copies, regardless of quantity.

### Legislation on Problems of the Aged

Problems of the aged and how to solve them continue to occupy the attention of some Congressmen. One of the major bills before a House Education and Labor subcommittee is H. R. 9822 by Rep. Fogarty (D., R. I.); it would provide funds for state conferences on aging, followed by a White House Conference in the spring of 1960. Other measures, including Rep. Zablocki's H. R. 11057, would authorize grants for studies and projects at state and local levels as well as create a Bureau of Older Persons in the Department of Health, Education, and Welfare. The subcommittee has heard bills' sponsors and next plans to hear Secretary Folsom and interested private groups.

Pending before the House Ways and Means Committee are a large number of bills amending the Social Security Act, from lowering benefit ages to increasing benefits. Principal measure of concern to the medical profession is Rep. Forand's H. R. 9467 providing for hospitalization and surgical services for the aged, their dependents and others who are entitled to benefits under social security. The AMA feels that there are not enough statistics in the whole field of the aged and that the Forand bill would encourage overutilization by social security claimants, thus limiting available beds for the acutely ill of all ages in the community. Hearings probably will be held on all social security proposals some time in May.

### Hill-Burton Changes

The Hill-Burton hospital construction act will expire in mid-1959, which means that Congress will be expected to take some action this year in order to allow for orderly planning. Several bills extend the act 3 to 5 years. Other measures (H. R. 6833 and H. R. 7575) would permit low interest loans as well as matching grants, an idea that has been pushed by certain religious groups. The administration proposed, then dropped, a plan for new emphasis on special needs rather than general hospital beds.

Senators Payne of Maine and Flanders of Vermont have sponsored a bill (S. 3588) for Hill-Burton grants up to \$25,000 for rural areas with population not ex-

ceeding 15,000 for unaffiliated non-profit associations or corporations to build diagnostic and treatment centers. No hearings have been scheduled as yet on any of the proposals. Rep. Coffin (D., Me.) has introduced a similar bill (H. R. 11826).

### **Federal Aid to Medical Schools**

Long-standing bills for one-time construction grants for new and existing medical schools are before the House Interstate Committee and the Senator Labor and Public Welfare Committee. The Senate committee has been deeply involved in hearings on general education and has not gotten around to medical schools. The health subcommittee of House Interstate may soon take up several versions pending there: H. R. 6874 by Chairman Harris and H. R. 7841 by Rep. Fogarty. The Senate bills are S. 1922 by Senator Hill and other Democrats and S. 1917 by Republican Senators Smith of New Jersey and Purtell.

### **House Approves More Money For Medical Research**

The House yesterday approved a Health, Education, and Welfare budget about 6 per cent over recommendations of the Budget Bureau, with almost all of the increase going for medical research. It accepted without change recommendations of its Appropriations Committee. A committee report was heavy with a criticism of the administration for delaying construction projects, for lack of aggression in improving numerous health programs, and for not requesting "realistic" appropriations. Among other items approved by the House was \$121.2 million for operations of the Hill-Burton hospital construction program, the figure finally recommended by the administration, after it first proposed only \$75 million. The bill now goes to the Senate, where hearings are scheduled to start next week. In contrast to the House, the Senate hearings are open sessions. In the past the Senate has increased a number of health-welfare appropriations, with a final compromise somewhat higher than totals originally set by the House.

### **Jenkins-Keogh Tax Deferment**

Of direct interest to the profession are the Jenkins-Keogh proposals for deferment of taxes on money paid into retirement plans by the self-employed. H. R. 9 and H. R. 10 are pending before the House Ways and Means Committee. Another version is part of an omnibus small business tax relief measure in the Senate Finance Committee; it would allow tax deferment on up to \$1,000 a year (the Jenkins-Keogh proposals provide for up to \$5,000); the companion bill before the House Ways and Means Committee is H. R. 10499. The Senate measure is S. 3194. House hearings on general tax bills early in the session touched on Jenkins-Keogh, but the committee has not yet reported out a bill.

### **Union Welfare Funds**

In S. 3443, Senator Allott (R., Colo.) would require that union welfare funds (including health plans) be required to register, make reports and disclose pertinent information. The Securities and Exchange Commission would be in charge of reports, etc., and would make the necessary regulations. Plans would be subject to the law if they operated in interstate commerce, if their sponsors were in interstate commerce, or if they were exempt from federal taxation. However, plans would be exempt if they were run by the federal or a state government, if a part of workmen's compensation programs or (for the first two years) if they covered fewer than 100 employees.

### **Aero Medical Backs Change in CAA**

The Aero Medical Association has called on the Civil Aeronautics Administration to strengthen its medical department and provide the department with funds adequate to its responsibilities, which include research and supervision of fliers' periodic physical examinations. The resolution proposes that the department be made directly responsible to the administrator. The group listened to three days of lectures and panel discussions, mostly on scientific phases of aviation medicine. Brig. Gen. M. S. White of the Air Force moved up to president of the association, being succeeded by Dr. Ludwig G. Lederer of



Washington, D. C. Elected as first vice president, in line for the presidency in 1960, was Dr. George J. Kidera of Chicago.

### **HEW Increases Construction Grants As Anti-Recession Move**

As an anti-recession measure, the Department of Health, Education, and Welfare is arranging to pass out more construction money than planned in the time between now and the end of the fiscal year June 30. Affected will be medical research facilities, hospitals and water treatment plants. In January, the schedule called for committing \$670 million before June 30; this now has been increased to an estimated \$800 million or more. Additional appropriations are not involved; money is merely being allocated faster by giving higher priority to projects on which building can start quickly. Largest increase is in the building of medical research facilities by hospitals, medical schools and other institutions, for which the U. S. provides \$30 million a year.

### **Unemployment Insurance**

House Ways and Means Committee has wound up brief hearings on various bills that would extend the period of benefits under federal-state unemployment insurance and require all employers, including physicians, to come under the system. The Chamber of Commerce opposed the changes while the AFL-CIO and American Public Welfare Association urged passage.

### **AMA Asks Improved Medical Setup In Civil Aeronautics Administration**

American Medical Association has asked Congress to strengthen the Civil Aeronautics Administration medical department so it can properly discharge its responsibilities. A letter from AMA General Manager Blasingame to Chairman Magnuson (D., Wash.) of the Senate Interstate and Foreign Commerce Committee points out that under present conditions the medical department is subordinated in the CAA and medical issues are being settled by the Civil Aeronautics Board, which does not have qualified medical personnel. The letter makes these points:

1. Physical standards for and medical evaluation of fliers "must be carried out by physicians experienced in aviation medicine and medical determination should be conducted by physicians . . . who have the necessary professional qualifications and experience."

2. There should be set up within CAA an office of civil air surgeon, with the chief directly responsible to the administrator, and a civil aeronautics medical research laboratory.

3. Rule-making authority for medical standards should be transferred from the CAB, which does not have a professionally qualified medical staff, to CAA.

Dr. Blasingame also pointed out that the AMA now has a permanent and active committee on aviation medicine, and that the Association's policy is based on recommendations of this committee.

### **U. S. Supports Two-Thirds Of All College Research**

A National Science Foundation survey indicates that almost two-thirds of all money for research and development work at colleges and universities comes from the Federal government. The U. S. contribution is about \$500 million, mostly for defense or similar projects. The NSF report also makes these points:

1. U. S. grants should be "explicitly and completely disassociated" from the institutions' budgetary crises, and should be for more than a year to assure continuity of activity.
2. Except in such specialized fields as engineering, agriculture and medicine, U. S. should avoid wherever possible setting up large-scale applied and development projects for development and testing.
3. U. S. should not pay faculty members more than the college scale, unless they are on leaves of absence.
4. U. S. classified projects on campuses should be reduced to a minimum "consistent with national security."

### **Rural Clinics Grants**

Senators Payne (R., Me.) and Flanders (R., Vt.) are sponsoring an amendment to Hill-Burton to allow private, non-profit associations or corporations to get up to \$25,000 in federal funds on a matching basis for building and equipping di-

agnostic and treatment centers. Rural communities with population up to 15,000 would be eligible and the group need not be affiliated with a hospital as required for other Hill-Burton projects. This bill (S. 3588) was followed by one from Rep. Coffin (D., Me.) along similar lines. His bill, H. R. 11826, offers grants to a single town of not over 10,000 or a group of towns with no more than 15,000. One major difference with the Payne-Flanders bill is that in H. R. 11826 the association or corporation would have to have a formal affiliation with a non-profit teaching hospital.

### **New Ruling on Medical Deductions**

Internal Revenue Service has clarified conditions under which expenses of travel, undertaken at a doctor's direction, may be deducted from taxable income. An elderly taxpayer, who was suffering from arterio-sclerotic heart disease, had been advised by his doctor to go to a predetermined location where the temperature would be more suitable and where he could receive proper medical care. The physician also banned any further travel or sightseeing. Also, the physician advised the patient to have a nurse accompany him to administer the necessary injections and medications and to help him in and out of his wheelchair.

IRS ruled that because the travel was to alleviate specific ailments and was not for general improvement of health, the taxpayer was entitled to deduct his travel expenses and those of his nurse.

### **Hearings Scheduled on Medical School Aid, Hill-Burton Changes**

The House Interstate health subcommittee has scheduled hearings on two important medical subjects, U. S. grants to help build medical school teaching facilities and extension and amendment of the Hill-Burton hospital construction act.

**On the medical school issue**, bills before the subcommittee are H. R. 6874 by Chairman Harris (D., Ark.) of the full committee and H. R. 6875 by Rep. Wolverton (R., N. J.), which was identical, and H. R. 7841 by Rep. Fogarty (D., R. I.). The Harris-Wolverton bills would tie in the

new teaching facilities grants with the present program of grants for building research facilities. The bill, introduced last year, specified \$225 million over five years, without earmarking for either research or teaching grants, but this figure is likely to be changed in subcommittee. H. R. 7841, also proposing a five-year program, would earmark \$45 million a year for medical schools, \$7 million for public health schools, and \$8 million for dental schools. Money could be used for teaching or research facilities.

**The Hospital bills** are H. R. 1979 (Poage, D., Texas), H. R. 6329 (Riley, D., S. C.), H. R. 6822 (Harris), H. R. 7575 (Watts, D., Ky.) and H. R. 7741, (Knutson, D., Minn.). The intent is to extend the program for from two to five years and to authorize long-term, low-interest loans for hospitals and other facilities when the sponsors prefer loans to grants. In H. R. 1979 a separate loan fund would be set up outside HB, to be administered by the Secretary of HEW.

### **Survey Indicates Average of 5 Visits a Year to Physician**

Data from the National Health Survey, covering July-September of 1957, indicate residents of the United States see a physician at the rate of just under five visits a year, with only 10 per cent of the visits in the home.

### **AMA Indorses 'Bricks-and-Mortar' Aid to Medical Schools**

American Medical Association has indorsed legislation for federal grants to help build and equip medical and dental schools, but has advised Congress that it opposes any financial incentive to increased enrollment that might tempt schools to accept more students than they could properly train. The Association's views were presented to Chairman Oren Harris (D., Ark.) of the House Committee on Interstate and Foreign Commerce, which has under consideration three bills on this subject.

### **Non-Profit Hospitals Offered Loans in Senate-Passed Bill**

A \$1 billion anti-recession federal loan program for construction of community



public works, including hospitals and medical schools, has passed the Senate and gone to the House. During the debate, two important developments occurred: 1. The Senate adopted an amendment by Senator Watkins (R., Utah) that would make non-profit as well as public hospitals eligible. 2. It was explained that public medical schools also would be eligible. Money may be used for additions and renovations as well as new construction under this measure, the Community Facilities Act (S. 3497).

### **Increase Hill-Burton for Next Year To \$201 Million, AHA Asks**

The need for more beds plus renovation of aging hospitals in urban areas justifies an appropriation of at least \$201 million for the next fiscal year for the Hill-Burton program. This is the position of the American Hospital Association in a letter to Chairman Hill of the Senate Appropriations subcommittee on the Department of HEW budget. The House voted the revised administration request for \$121.2 million. AHA said that if necessary Hill-Burton regulations should be changed to take care of the renovation problem. The association also advocated the authorized amount for research be raised from \$1.2 million to \$3 million.

### **Labor Secretary Mitchell On Workmen's Compensation**

Secretary of Labor Mitchell believes the best way to improve workmen's compensation laws is to work with the states legislatures, not Congress. He expressed doubts that any progress could be made in Congress. Mr. Mitchell's views were given to an AFL-CIO national conference on workmen's compensation which was called to lay the groundwork for a model federal workmen's compensation act.

vention June 23, 1958 at the beautiful Olympic Lakeside Golf and Country Club, San Francisco, California. This will be a whole day of rest and relaxation with golf, luncheon, banquet, and a prize for everyone. We have left no stone unturned to assure you the very best. Tee off time 8 AM to 2 PM. We cordially invite all golfing doctors to attend. Handicaps scratch to 30 in flights.

For information, contact James J. Leary, M.D. Secretary, 450 Sutter Street, San Francisco, California."

### **Ark. Breakfast at AMA Meeting**

An Arkansas breakfast will be held by the Arkansas Medical Society Monday morning, June 23 in the Palace Hotel in San Francisco in honor of the officers and members of the House of Delegates of the American Medical Association. Some two hundred and fifty people will be in attendance. Special guest speaker will be Mr. Oren Harris, congressman from Arkansas, Arkansas souvenirs will be given away and some Arkansas Traveler certificates will be presented to the officers of the AMA. A special voluntary fund has been collected to finance this affair. All Arkansas physicians and their wives are urged to attend this breakfast while attending the annual meeting of the American Medical Association.

### **Oklahoma Colloquy on Advances in Medicine**

The Second Oklahoma Colloquy on Advances in Medicine will be held on November 12, 13, 14, and 15, 1958. It will be devoted to Arthritis and Related Disorders and is under the joint sponsorship of the Department of Medicine, University of Oklahoma, the Division of Postgraduate Education, Geigy Pharmaceuticals, Wyeth Laboratories, The Upjohn Company, Pfizer Laboratories, and Schering Corporation.

Twelve nationally prominent investigators in their field will participate and present the results of original work from their laboratories.

On November 15 the University of Oklahoma football team will play the University of Missouri at Norman, Oklahoma. Registrants may apply for tickets by writ-

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## **ANNOUNCEMENTS**

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### **Golf Tournament**

"The American Medical Golfing Association is holding its annual golf tournament in conjunction with the AMA Con-

ing the Athletic Ticket Office, University of Oklahoma, Norman, Oklahoma.

Registration will be open to all physicians. Further information may be obtained by writing to the Division of Postgraduate Education, University of Oklahoma School of Medicine, Oklahoma City, Oklahoma.

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## PERSONALS AND NEWS ITEMS

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**Dr. Eugene Crawley**, Little Rock pediatrician, spoke to the Conway Rotary Club recently. His subject was "The President's Youth-Fitness Program."

**Dr. F. C. Maguire, Sr.**, was recently honored at a reception in the First Baptist Church of Augusta. Dr. Maguire has completed 50 years of active practice of medicine at Augusta.

**Dr. James T. Wortham**, Little Rock, participated in a Clinico-Pathologic Conference at the 78th Annual Meeting of the Louisiana State Medical Society in Shreveport May 6, 1958.

A number of Arkansas physicians were present at the American Academy of General Practice meeting in Dallas, Texas. Among those present were: **Drs. John R. Wassell** and **William A. Snodgrass, Jr.**, Little Rock; **B. M. Gardner**, Star City; **Charles W. Dixon**, Gould; **H. W. Thomas** and **Major E. Smith**, Dermott; **L. E. Drewrey** and **R. B. Robins**, Camden.

At the Southwest Surgical Congress in Houston, Texas, **Dr. M. C. Hawkins, Jr.**, of Searcy was a member of the panel which discussed the general topic of "Endometriosis."

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## Proceedings of Societies

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The Southeast Arkansas Medical meeting was held at McGehee March 17 at the Greystone Hotel. A dinner was served the doctors and their wives. **Dr. Gordon Oates** of Little Rock and **Dr. Jack Kennedy** of Arkadelphia were the speakers.

Members of the Pulaski County Medical Society and their wives were entertained April 1 at a dinner in the officers club of the Little Rock Air Force Base in observance of "Doctors' Day." Following a social hour and dinner, the medical society held its monthly meeting.

**Dr. P. J. Dalton** of Camden entertained the members of the Ouachita County Medical Society at a dinner at the Camden Hotel Thursday night, April 3, 1958. Special guest speaker was **Mr. Phil R. Overton**, Austin, Texas, who is the attorney for the Texas State Medical Association. **Mr. Overton** talked on "Malpractice." Special guests were **Dr. T. D. Brown**, Little Rock; **Dr. H. King Wade, Jr.**, Hot Springs; **Dr. R. C. Dickinson**, Horatio; **Dr. K. R. Duzan**, El Dorado; **Dr. Sam Jameson**, El Dorado; and **Dr. Geo. Burton**, El Dorado.

The Craighead-Poinsett County Medical Society met April 2nd at Jonesboro Country Club with **Dr. Jabes F. Jackson** of Newport as guest speaker. **Dr. Jackson's** subject was "How About Grandma."

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## *Random Thoughts*

### OF THE SECRETARY

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March 25th. The Auxiliary, with tongue in cheek, celebrates "Doctor's Day" with a delightful evening, presenting, to general amazement, singers **Boulton, Sherman, Koenig and Knight**; **manequin Foltz** and virtuoso **Krock, Olson and Hawkins**.

March 28th. Quoted from an article, "Carcinoma of the Larynx and World War I," appearing in the March, 1958 issue of The Rocky Mountain Medical Journal: "There are as many discrepancies to the controversy concerning **Fredrick's** illness as there are to the alter-



cation at Little Rock." Well, it probably had to eventually reach a scientific publication.

March 30th. Journeying in lower air lanes because of unfavorable weather to Hot Springs where the Committee on Revision of the Constitution is scheduled to meet but with Hundley and Brooksher representing the full committee. We are constrained to remark that it may not have been an important meeting but acceptance of membership on a committee certainly implies the obligation to give a measure of service to its work. Who will do our work for us if we do not?

April 5th. With all the frantic talk in Washington which we accept as mostly talk, mostly politics, we wonder in increasing degree just what has happened to American self-reliance; we built a country, cities and even private fortunes, not to mention debts and we took care of our own; the old, the sick and the errors we made. We did not have security; perhaps we were not even happy, but when death came—we were free and thereby attained the only security possible to humanity.

April 8th. After thirteen months of vacillation, evasion and, probably, indifference, the section on radiology is permitted to present its program on radiation hazards and protection to the county medical society this evening, and we would not normally say so, are moved to report its reception as being deserving in the highest degree. The evening further distinguished by the fact that Shermer read the minutes without speech impairment.

April 18th. Pullen becomes the first "fan" to report on the current series of these comments and are we glad for one favorable opinion.

April 19th. The renovated President-Elect Hundley comes to town, an occasion for conviviality at Schaefer Acres, where Jean serves fowl done to an epicurean taste and Schaefer, mater, contributes to the general hilarity.

## *Woman's Auxiliary*

The 58th General Assembly of Arkansas introduced a resolution designating March 30 as Doctor's Day in appreciation of the guardians of the nation's health. This was observed by many of the auxiliaries.

**Benton County:** Observed the day by presenting each doctor with a red carnation and sending red carnations to the churches to be used as altar flowers. The auxiliary placed a copy of the book "The World We Live In," in the school libraries in Rogers, Bentonville, Gravette and Siloam Springs, honoring the doctors of the county. The doctors of the county were also entertained with a dinner in the home of Dr. Ted Overman at Gravette.

**Boone County:** The auxiliary sponsored the annual Doctor's Day dinner held at Westminster Hall, First Presbyterian Church in Harrison. The ladies were presented with gardenia corsages and boutonnieres of red carnations were given to the doctors and dentists. An entertaining program was presented.

**Desha County:** The Greystone Hotel at McGehee was the setting for this auxiliary-sponsored dinner. Outstanding speakers for the meeting were Dr. and Mrs. Jack Kennedy of Arkadelphia and Dr. and Mrs. Gordon Oates of Little Rock.

**Garland County:** Auxiliary members honored their husbands at a dinner in the Hot Springs Country Club. A musical skit was presented. Coffee and doughnuts were served one morning at the Hot Springs' hospitals for the doctors, and a red lapel rose was presented each physician. As a further tribute, flowers were placed in the churches of the city.

**Greene-Clay Counties:** Dr. and Mrs. Jacob Williams Jr., entertained with a Doctor's Day dinner in their home at Paragould. Each doctor was presented with a red carnation boutonniere.

**Pope-Yell Counties:** The Pope-Yell County Medical Auxiliary entertained the doctors with a dinner at the Old South in Russellville. Each doctor was presented with a red carnation and favors for the men and ladies were presented by the local drug stores.

**Sebastian County:** A dinner-dance at the Hardscrabble Country club in Fort Smith was given honoring the physicians. Mrs. J. S. Southard was the party chairman and settings were made around the theme, "It's in the Bag." Specialty acts, humorous talks and other numbers were presented. The doctors wore boutonnieres of red carnations.

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## BOOK REVIEWS

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**TEXTBOOK OF VIROLOGY.** A. J. Rhodes, M.D. and C. E. van Rooyen, M.D. The Williams and Wilkins Co. Baltimore. Pages 642. 1958. \$10.00.

Very few practicing physicians have need of a special textbook on virology. Should they need a ready reference, Rhodes and van Rooyen have written an excellent text. It is generally divided according to the portions of the body rather than to the family to which the virus belongs—in contradistinction to many of our textbooks of bacteriology which lumps similar families together despite their diverse effect in the body. Of especial interest to all physicians is the well written captive on poliomyelitis, virus hepatitis and rabies. The field of virology is progressing so rapidly that it is difficult to keep all the newest information in a textbook. Nevertheless as of this writing, this book seems quite up-to-date. It is recommended as a reference book on virology for the practicing physician rather than a book which would have frequent use.—A.K.

**SURGERY IN WORLD WAR II: ORTHOPEDIC SURGERY, MEDITERRANEAN THEATRE OF OPERATIONS.** Oscar P. Hampton, M.D. F.A.C.S. Assistant Clinical Professor of Medicine. St. Louis. Pp. 368. Illustrated. Buckram Binding 1957. Office of the Surgeon General, U. S. Army. Supt. of Documents, U. S. Government Printing Office, Washington. \$4.00.

One of a series of reports on medical operations in World War II, this book deals chiefly with methods and organization of the Corps in the North African Campaign, 1942 to 1945. There are a few chapters on administration in battle casualties but for the most part the text deals with medical problems encountered in the practice of orthopedic surgery during war or under similar condi-

tions. It is a clinician's report and hence valuable to anyone interested in orthopedics. There is considerable, definitive treatment; there is much help in how to handle the case before and after it is hospitalized. The book is clear, direct and without the addition of extraneous material. It could readily be used as a text book in most any sort of "disaster surgery."—F.R.

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## TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

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### The Surgical Treatment of Pulmonary Coccidioidomycosis With a Comprehensive Summary of the Complications Following This Type of Therapy

*Dermont W. Melick, M.D., The American Review of Tuberculosis and Pulmonary Diseases, January 1958.*

**Introduction.** This is a report on 400 cases of coccidioidomycosis treated by surgery. Sixty-six different surgeons participated, including the writer.

The data for the most part were gathered by the questionnaire method. One such questionnaire was sent out in 1950 and a second in 1953. A questionnaire for 1957 is incomplete. Some of the 1957 data are, nevertheless, used in order to bring the report up to date.

**Indications for Surgical Therapy.** The indications for surgical therapy are presented in a somewhat arbitrary grouping, but it is hoped this will aid in clarification.

#### *Absolute Indications—Group I*

a. Giant Cavity (more than 5 cm.); b. Infected cavity; c. Ruptured cavity—giving rise to Bronchopleural fistula, Empyema, Nonexpansile lung, or Persistent pneumothorax.

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● Surgery has a definite place in the treatment of pulmonary coccidioidomycosis despite a complication rate of 13 per cent in the 400 cases studied. There is no good antifungal agent now available to assist in protecting the patient when surgery is performed.



*Probable Indications—Group II*

a. Enlarging cavity; b. Cavity with hemorrhage.

*Possible Indications—Group III*

a. Coin lesion; b. Persistent cavity; c. To establish diagnosis, 1. Tumefaction, 2. Other inflammatory lesions: tuberculosis, histoplasmosis, blastomycosis.

The absolute indications under Group I will cause very little comment, as the necessity for surgery is obvious.

The probable indications under Group II are those cases with definite warning signs of impending complications. Definitive surgical therapy is considered to be indicated. An enlarging cavity, particularly if it is near the visceral surface of the lung, may rupture. This not infrequently results in a pneumothorax. The more disturbing sequelae of rupture are bronchopleural fistula, empyema, and non-expansile lung. Rarely a patient may be fortunate enough to have only a minimal pleural effusion following rupture. Intracavitary hemorrhage may be severe. Recurrent hemorrhage in a cavity usually demands surgical extirpation.

The possible indications (Group III) will not be universally accepted among thoracic surgeons. Most thoracic surgeons are inclined to the well-founded belief that all "coin lesions" demand early thoracotomy in order to establish the diagnosis with accuracy. Emphasis has been placed on the high percentage of malignancy (15 to 35 per cent) in the coin lesion.

The "coin lesion" due to coccidioidomycosis is a frequent finding in the endemic area. It is estimated that the "coin lesion" in the endemic area will be found to be malignant in less than 5 per cent of cases. The decision to be made by the individual surgeon in such an area is whether this reduction in percentage justifies conservatism.

It would appear, therefore, that the "coin lesion" in the endemic area should be given more scrutiny than the "coin lesion" in other geographic areas. This would imply a careful history of past febrile episodes, adequate skin testing (with particular attention to the 1:100 to 1:10 coccidioidin), plus blood-agglutination and complement-fixation tests. It is believed by some

that the roentgenographic appearance exhibits characteristics highly suggestive of coccidioidomycosis. The disease is not infrequently located near one of the pulmonary fissures and it has a propensity for burrowing across the fissure from one lobe to another. This "crossing the fissure" sign lends weight to a presumptive diagnosis of coccidioidomycosis. If, after careful search, the diagnosis of the "coin lesion" remains indeterminate, the decision for exploratory thoracotomy will not be questioned. Caution, however, should be exercised by the surgeon. In one report of resections for "coin lesions," the surgeon performed lobectomy in three of four cases. In order to prevent undue loss of lung tissue, a more localized excision may be advisable to establish the diagnosis.

The second possible indication is persistent cavitation. Depending on the size of the cavity, most physicians (and even some surgeons) would prefer to treat such a case conservatively. The cavity may disappear and surgery be unnecessary. Some California surgeons believe disappearance of a cavity is wishful thinking and that "recavitation" in the same area will occur sooner or later. One surgeon, however, found cavity closure to occur in 25 per cent of his first ninety-two patients. Cavitary lesions have been observed to remain the same size for months and even years. The present writer has observed one case of bilateral cavitation with gradual decrease in size of both cavities and eventual disappearance during a period of two and one-half years. If a cavity persists for twelve to eighteen months without closure and specifically if it is not definitely decreasing in size, the chances of its closing spontaneously are remote indeed. One should bear in mind that the complications reported in the latter part of this paper have been found to follow cavitary lesions much more frequently than to follow surgery on solid lesions. This may be explained by the fact that the mycelial form of *Coccidioides immitis* is present in 50 per cent of cavitary cases and in only 10 per cent of solid lesions.

*Comprehensive Summary of the Complications Following Surgical Therapy.* The complications following surgery for coccidioidomycosis are probably higher than

might be surmised from reading the reports in the literature. A recent article states that complications were experienced in three of the seven patients operated upon.

The 400 cases herein reported have had a complication rate of 13 per cent (seven deaths occurred in this group.) One group of surgeons reported only five complications in 110 cases, while another in their 55 cases, reported five complications.

The complications range from persistent postoperative pneumothorax through empyema and non-expansile lung to bronchopleural cutaneous fistula and multiple chest wall sinuses. In the 54 cases reported by the present writer, the ten complications can be divided into five major and five minor complications. The major complications were:

1. Bronchopleural cutaneous fistula with multiple chest wall sinuses.
2. Bronchopleural cutaneous fistula with empyema characterized by debilitation and invalidism of the patient.
3. Recurrence of cavity resulting in

bronchopleural cutaneous fistula following secondary operation.

4. Bronchopleural fistula with empyema requiring open drainage and followed by a prolonged period of healing.

5. Persistent cavitation at the same site of removal of the original cavity.

The five minor complications included two cases of empyema treated successfully by repeated thoracentesis; one case of persistent minimal hemoptysis (present over a period of fifteen months) thought to be due to a small cavity in the same area at the original resection with eventual spontaneous closure of cavity and cessation of hemoptysis; progressive pneumonitis in the same area as the resection with evidence of a small cavity with eventual spontaneous resolution and cavity closure; and one case of persistent pneumothorax followed resection.

The over-all complication rate of 13 per cent may be expected to continue as long as the etiologic agent is not controlled by any of the known antimicrobial drugs. Despite the complications, there is no doubt that surgery has a definite place in the treatment of pulmonary coccidioidomycosis.



# The JOURNAL OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

JULY, 1958

Number 2

## HOARSENESS *Diagnosis and Treatment*

JOSEPH H. OGURA, M.D.\*

There are at least 120 causes for hoarseness. Any patient presenting persistent complaints of this symptom should be investigated by mirror examination in order that proper treatment be given. Since it is impossible to describe all of the known causes, only the common etiologic factors will be discussed briefly. Of great aid to the practitioner is the use of dionisil in contrast laryngograms. The latter radiographic technique shows a high correlation between what is seen on x-rays and the extent of the primary lesion.

### INFLAMMATION

Acute laryngitis either as a localized self limited disease, or as a part of an upper respiratory infection or a tracheo bronchitis is the commonest cause for hoarseness. Antibiotics generally have little value in the localized disease, and show only diffuse redness of the true and false vocal cords. On the other hand, in children the virulent form of acute laryngo tracheo bronchitis, where hoarseness is associated with stridor, responds quickly to wide spectrum antibiotics. The use of the Beck pharyngoscope will greatly aid direct visualization of the larynx without the use of the Flagg laryngoscope.

Chronic laryngitis can be recognized by the long history, dull, thick, red, true vocal cords in a person who habitually abuses his voice, and often smokes and drinks

moderately heavily. Usually attention at clearing up foci of infection in the upper respiratory passage, eliminating smoking and re-education of the extrinsic and intrinsic muscles of the larynx by a voice teacher will affect a cure.

Tuberculosis of the larynx is still occasionally seen by the otolaryngologist in practice. It is common in the tuberculosis sanatorium. It is never a primary disease, but always seen in association with pulmonary tuberculosis. The local lesion affects the inter arytenoid area, false cord, and epiglottis commonly. The true cords are seldomly involved. Painful hoarseness is typical of tuberculosis. Extreme pallor and edema, miliary tubercles, serpiginous ulcers, to papillary pseudo epitheliomatous hyperplasia are the types of variations seen by mirror examination. Streptomycin therapy will effectively cause rapid resolution.

### NEUROLOGICAL CAUSES

Unilateral paralysis more commonly affects the right vocal cord. Hoarseness will be great if the paralyzed cord is off the midline (paramedian position) to aphonia if the paralyzed cord is in a more lateral position (cadaveric position).

In order of frequency the causes are idiopathic, after thyroidectomy, superior sulcus tumor, enlarged cervical nodes, and carcinoma of the upper esophagus. Peripheral neuritis has been attributed to many of the cases in the idiopathic group. The radiologist has been able to make this diagnosis easily by contrast laryngo-

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§Presented April 23, 1957, annual session of Ark. Medical Society, Little Rock, Ark.

grams and at the same time rule out a subglottic tumor. Occasionally an apparently paralyzed cord is due to a subglottic tumor infiltrating the intrinsic muscles of the cord.

Little can be done for paralyzed cord from the medical viewpoint. Large doses of B 12 has not improved cordal function in the idiopathic group. Surgical procedures can aid in producing a better voice where this is important to the patient.

Hoarseness is absent in unilateral midline paralysis and also in bilateral midline paralysis. Dyspnea and audible stridor is marked in bilateral involvement of the recurrent laryngeal nerve. Thyroidectomy is the common denominator in every instance. The King operation or cordopexy has been used successfully in the restoration of voice and respiratory functions of the larynx in a large series of cases at our institution.

#### PSEUDO TUMORS

Vocal nodules and its pathologic variations varix, polyp, amyloid tumor occur commonly in children and adults. Vocal abuse appears to be the most important factor. Variations in size occur from tiny excrescences, a raised red or white capped nodule, a polypoid mass to a ruby red pedunculated polypoid mass located on the junction of the anterior and middle one third of both vocal cords. In children it is better to leave these nodes alone, whereas in adults these nodes are better excised. Voice re-education is necessary in nearly all instances to prevent recurrence.

Contact granulomas are in reality pyogenic granulomas occurring on the medial surface of the vocal process. Hoarseness is minimal since the functioning portion of the cords are anterior to this area of involvement. This complication occurs not infrequently following incubation for general anesthesia. These patients complain of a sense of fullness and accumulation of mucous in the throat. A combination of excision, voice rehabilitation, steroid therapy, and x-ray therapy may be necessary.

#### TUMORS

The commonest benign tumor occurring in the larynx is papilloma. The majority occur in children in the first few years of

life and appear as a raised warty growth located over the true vocal cord. Hoarseness is marked and on occasions may even cause marked dyspnea. These are said to disappear by puberty, but in our experience this has not been the case. Frequent excisions when they are apparent is preferable to leaving them alone until they become bulky. The use of estrogens, antibiotics on the basis that they are of viral origin, and caustic agents have been of little value. Irradiation therapy is contraindicated. Late malignant degeneration has resulted in two instances. Other benign tumors such as fibroma, adenoma, and angioma have been occasionally found.

Much has been written about malignant tumors of the larynx (1, 2). There has been a pronounced increase in incidence in the last few years. Males predominate in a ratio of nine to one. Nearly all of these cases are heavy smokers. Hoarseness is marked when the lesion involves the true cord only, but a muffled voice, and slight change of the voice results when the lesion is either above or just below the true vocal cords. The major associated complaint can be lumped in symptoms attributed to "globus hystericus" group. Such symptoms as a fullness in the throat, bizarre complaints as "I prefer warm beer to cold beer," a "sensation of glass in the throat" and later "discomfort in my ear" is frequently noted. If one sees a fungating or ulcerating lesion, the radiologist can by contrast laryngograms make the diagnosis often before the biopsy is made.

The present day management of tumors occurring in this area are handled by irradiation in only one instance. Carcinoma involving the true mobile cord can be cured in 95 per cent of all cases. The Hemilaryngectomy can also effect as high as a 5 year cure rate. The selection of the form of treatment will depend to a great extent upon the situation of the patient and type of therapy available to the physician.

On the other hand, malignant infiltration of the cord, or arytenoid eminence from either a supraglottic or subglottic tumor demands a wide field laryngectomy and either unilateral or bilateral neck dissection at one operation. Unless the met-



astatic cervical adenopathy contraindicates surgery, the presence or absence of palpable adenopathy does not preclude just the removal of the larynx alone. Non palpable metastatic disease occur so frequently in the authors experience at the time of initial examination that neck dissection has become a routine procedure at the time of laryngectomy. The operative mortality rate, morbidity, cosmetic result, esophageal voice is just as satisfactory with this extensive procedure as by laryngectomy alone.

When the lesion is above the true cord, and there is a margin of safety between the tumor and the cord and arytenoid eminence, a new operative method for preserving the true vocal function can be accomplished. The transhyoid, translaryngeal pharyngotomy combined with radical neck dissection and primary closure of the pharynx has been possible in many instances where previously the larynx was sacrificed. In the experience of the author, many of these patients are entering the fourth year without evidence of recurrence and are able to speak and eat in a normal fashion.

## SUMMARY AND CONCLUSION

Any persistent hoarseness regardless of how trivial the change of voice may be should be investigated thoroughly. Bizarre associated symptoms frequently attributed as "nervousness" or "globus hystericus" may be the first sign of a lesion involving the supraglottic structures. Contrast laryngograms show a high correlation rate between radiographic visualization and the primary lesion. Malignancies involving the larynx are increasing, but carry a relatively good prognosis. Irradiation will successfully cure a lesion involving the mobile true cord only. Laryngectomy and radical neck dissection for all other carcinomas that invade the true cord from the supraglottic or subglottic areas. Transhyoid, translaryngeal pharyngotomy combined with neck dissection is reserved for lesions strictly in the supraglottic areas where the true cords are free of tumor.

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# AIR EMBOLISM

HENRY G. HOLLENBERG, M.D.\*

Air embolism is a matter of interest and importance because it occurs more often than is generally recognized and because it is apt to be fatal within a few minutes. It occurs under a multitude of circumstances which are treacherous and often preventable. A fatal outcome can often be evaded by the mere placing of the patient in the proper position. There are other helpful maneuvers. Nurses, technicians and hospitals having to do with blood transfusions and intravenous therapy may suddenly become involved in such a case. It behooves all anesthetists, surgeons, and other physicians to be familiar with the situation. Naturally there are medico-legal aspects.

We are discussing here those instances where a considerable amount of air is introduced into the general circulation. There is a venous type of air embolism and there is an arterial type. We are not discussing those interesting and important disorders such as caisson disease and certain situations in aviation medicine where gases in the blood may be liberated and form tiny bubbles of free gas.

Everyone has seen a few cubic centimeters of air introduced in the tubing of an intravenous set. Ordinarily this is quite innocuous though it can prove fatal if the patient happens to have a patent interventricular septum. Death from venous air embolism occurs from the production of an air lock in the right ventricle. Death from arterial air embolism usually is due to the occlusion of coronary arteries by air. The explanation of these phenomena is simple and requires only a brief review of the circulation involved.

## VENOUS AIR EMBOLISM

The accompanying diagram shows the return of venous blood from the systemic veins through the superior and inferior vena cava to the right auricle, the right ventricle, thence thru the pulmonary arteries to the lungs. Venous air embolism occurs within this system and it can go no further than the lungs because it cannot pass through the capillary system there.

Ordinarily very little of the air gets within the pulmonary artery. It churns about in the right ventricle with some remaining blood forming a compressible froth which prevents the passage of blood. It is well to consider the pressure gradients within this venous system. Venous pressure in the extremities and in the superior vena cava is low or is negative depending upon the position of the extremity or the patient and depending upon the state of inspiration or expiration. It is of course easy for air to enter a negative pressure venous system when there is any sort of opening in it. It is generally considered that 100 cc of air introduced rapidly in an adult patient will be fatal. Lesser amounts may cause trouble or larger amounts may be tolerated. When the circulation of blood to the lungs has thus been stopped the patient rapidly becomes anoxic and dies within a matter of a few minutes. If less than a full ventricle of froth is present, the maintenance of the circulation depends entirely upon the position of the patient. Inasmuch as the orifice of the pulmonary artery is at the base of the heart and somewhat to the left, the circulation is best maintained with the patient in deep Trendelenburg position and on his left side. This permits the buoyant air to rise to the surface near the apex of the right ventricle. A column of blood thus remains intact between the cava, the right auricle, the right ventricle and the pulmonary artery. Therefore this is the proper position for a patient in distress. The opposite position with the patient somewhat erect or prone and on the right produces the worst results inasmuch as a small amount of froth then rises to the base of the heart and occludes the pulmonary artery.

## ARTERIAL AIR EMBOLISM

For this to occur air must enter the limited stretch of circulation between the lungs and the left side of the heart or into the left heart directly. Usually it is in the pulmonary vein or a branch of it. The pressure here is usually negative. Death most commonly results when a portion of

\*311 Waldon Building, Little Rock, Ark.



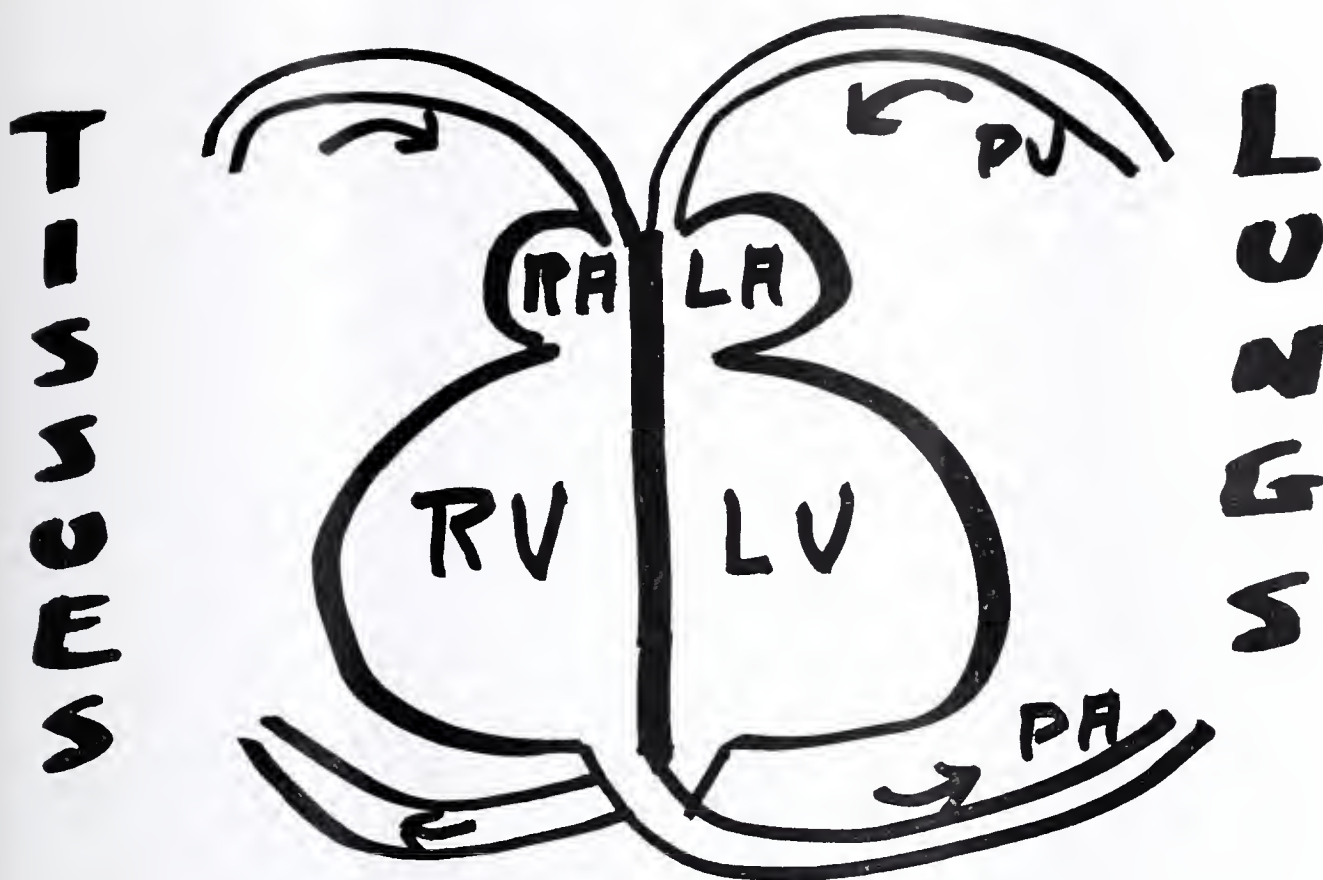


Fig. 1. In this highly diagrammatic portrayal of the circulatory system, it may be seen that venous air embolism occurs by the introduction of air into the venous system between the tissues and the right auricle. The air becomes trapped in the right ventricle and very little goes beyond into the pulmonary artery and none passes through the lungs. In arterial air embolism the air must enter within the short space of the circulatory system between the lungs and the left auricle being introduced usually in the pulmonary vein or in open cardiac surgery within the heart itself. The air may then pass on into the brain or other tissues. There is no way for air to get from the systemic venous circulation into the systemic arterial circulation unless there is some abnormal communication such as a patent interventricular septum.

#### MEANS OF OCCURRENCE

**Venous air embolism.** At surgical operations there are well recognized dangers in the opening of a large vessel particularly in the neck and in the chest. These dangers are so well known that measures are taken to prevent any ingress of air in the event that such a vessel has been inadvertently cut or torn. But there are dangers of a more subtle nature when one operates upon a portion of the body which is elevated above the level of the heart. Such a position is commonly used in operations upon the extremities, in the pelvis in the Trendelenburg position, and in the erect position on the head and neck. Such positioning is desirable because of the advantages of exposure and because of the fact that the negative pressure within the venous system prevents venous bleeding and allows a drier field. But for the very same reason a vein may be opened and remain unrecognized and unclamped because there is no bleeding from it. If such a wound is kept moist and full of blood or salt solution no air can enter. But a good surgeon keeps his wound dry and in this position the wound is naturally dry so that air may be sucked in without the operator being aware of it.

air enters the coronary arteries. Larger amounts of air may form an air lock within the left ventricle as described on the right side. Air emboli to the brain may be quite symptomatic or disastrous (1).

Ordinarily there is no communication for gross air between these two systems. But if there is an opening in the interventricular septum a small amount of air within the right ventricle can get into the left ventricle and produce death by coronary occlusion.

Trouble may occur very suddenly. Hamby (2) reports 5 such accidents in the course of neurosurgical operations done in the erect position from 1 clinic alone. Four of these were fatal. If a blood donor is supplying blood into a vacuum bottle which has lost its vacuum, the blood will flow until the pressure within the closed bottle has reached the pressure within the veins below the tourniquet. The blood will then stop flowing. If the donor happens to have hypertension and the tourniquet is applied with a greater degree of pressure then a larger amount of blood will run into the bottle before it stops. It may be thought that the needle is out of position and if the tourniquet is released and the needle is still within the vein, then the air above the blood already in the bottle will shoot back into the donor's arm. If as much as 75 to 100 ccs of blood has been drawn into the bottle under these circumstances then that much air may be injected into the patient's vein very promptly and may produce a fatal result immediately. If the same situation has arisen with only 30 or 35 ccs of air inserted into the patient's heart, he may have no symptoms whatsoever while he is lying down and his circulation to the lungs is intact. But when he sits or stands then the air within the right ventricle will rise to the base of the heart, his pulmonary artery may then be occluded and he may have severe symptoms. Improvement in such cases should immediately follow the proper positioning of the donor. The same situation may arise in collecting blood in a bottle which is not a vacuum bottle but which is closed and has a vent for air, the vent being obstructed. These difficulties may be obviated by inverting the bottle and letting the blood flow up into the blood already in the container. But such is unhandy because one cannot see whether the blood is running or not. It is essential in using a vacuum bottle to be certain that the vacuum is present. This can be determined by making sure that there is the characteristic sound on shaking the bottle. Collapsible tubing is also a good precaution.

Disasters have been reported in surprising manners during the course of ordinary blood transfusions and in the giving

of other intravenous fluids. A highly dangerous procedure is to pump air into a bottle of blood or other fluid to hasten its administration. In the confusion of caring for a seriously ill patient the bottle is forgotten, empties rapidly, and of course the air under pressure enters. Another means is in the utilization of tubing having a small leak which will permit the entrance of air without allowing fluid to leak out of the defect. A large amount may bubble in over a period of time. The same situation may occur when one has a stopcock arrangement which leaks. A large amount of air can enter while one is doing a cutdown on a vein to insert a cannula. This usually occurs in an elevated extremity when the opening of the vein is being held open to allow the cannula to be inserted (3). There is some danger in allowing fluids to run in completely and to allow the apparatus to remain for some time before withdrawal of the needle. This is probably not dangerous if the patient's arm is on a level with the heart but if the arm is elevated then it is possible for air to enter. It has been suggested that a tiny ball float be present in the fluid and to occlude the opening of the tube when the last drop is exhausted.

Because of the large venous plexuses present in the pelvis, particularly during pregnancy, it is not surprising that there are a multitude of situations in obstetrical and gynecological practice where air embolism occurs (4). It is easy to see how it may happen in the course of Cesarean section where large veins may be opened. The presence of a considerable amount of blood usually prevents it. It may happen in dealing with a placenta previa or in a version and extraction maneuver done from below. Catheters inserted into a pregnant uterus for the purpose of abortion may readily be placed beneath the placenta and furnish an entrance for air. Enough trouble has resulted from the injection of air to study the contour of the Fallopian tubes to make the use of lipidol more desirable. It is amazing that air embolism may occur in a woman just a few days following her menstrual period when air is inserted into the vagina under pressure in the procedure of poudrage for trichomonas. This has occurred fre-



quently enough to prompt the manufacturers of this apparatus to recommend that the rubber cuff be held very loosely against the vulva or better still that the powder be blown into the vagina through a vaginal speculum, a procedure incidentally which is entirely safe and effective. Air embolism has also occurred in patients a few days postpartum when taking exercises in the knee chest position. Such exercises are forbidden in some clinics for this reason.

There are rare cases reported during the course of injection of air for the purpose of pneumoencephalography (5). Such air is erroneously injected into the veins outside of the dura. But in neurosurgical practice one of the most common means of trouble is in the use of the erect position. There are other bizarre situations too numerous to detail. But in urology the injection of air for purposes of perirenal insufflation studies is fraught with considerable danger. The use of more rapidly absorbable gases such as carbon dioxide does not obviate the dangers of gas injection which has happened rapidly. Air has been known to enter the circulation during the course of air cystograms. In suicidal cut throat death is due to air embolism rather than bleeding in many cases.

During the course of the injection of air for purposes of establishing a pneumoperitoneum in the treatment of pulmonary tuberculosis there is a considerable danger of injecting air into the liver, spleen, a pregnant uterus or some other such organ and causing death. In nose and throat practice antral puncture has been known to be the mode of entry. Blast injury without external wounds but with extensive pulmonary ones has been known to include embolism as one of the many effects (7).

### ARTERIAL AIR EMBOLISM

While this type of embolism is less common than the venous type and while it can occur in a much smaller variety of situations, it is nevertheless equally dangerous and actually can be fatal with injection of a much smaller amount of air.

In the course of thoracic surgery and particularly open cardiac surgery there are obvious means by which air can enter this side of the pulmonary circulation. Every-

one doing this type of work is thoroughly aware of the danger. Precautions are taken to prevent it.

It is not commonly recognized that "pleural shock" in the course of artificial pneumothorax or actually in the course of spontaneous pneumothorax is arterial embolism. The means by which air enters the circulation in the course of an artificial pneumothorax is somewhat hypothetical but probably correct. It is not from injection of air into the veins of the chest wall or into veins of the lung itself though this can occasionally occur. But when air is injected into the pleural cavity and when a diseased portion of lung collapses it is understandable that a small vein, a branch of the pulmonary vein may be cracked and opened. Inasmuch as there is some negative pressure in such a vein the air can promptly enter in an amount which is entirely dependent upon the size of the opening (6).

### RECOGNITION

When air embolism occurs and the patient is conscious he will exhibit apprehension and complain of some discomfort. And if the air is considerable in amount he will become promptly unconscious. In all cases there will develop tachycardia, dyspnea, cyanosis and shock. Crepitation can be felt in some cases in the jugular vein usually on the right side. The auscultation of the heart is characteristic and most important. There is a large crunching murmur usually described as a "mill wheel murmur." To those who have heard this the sound is characteristic and is described as being many times as loud and spectacular as the machinery murmur of a patent ductus arteriosus. In cases of arterial embolism it is said that bubbles can be seen in the retinal vessels. "Marbling" of the skin results from stoppage of arteries in the involved skin.

The diagnosis may be confirmed post-mortem by x-rays of the chest and heart which will clearly show the air in the right ventricle in the case of a venous type embolism (8). At autopsy it is recommended that the large vessels of the heart be ligated before the organ is removed from the body and that the heart be opened under water.

## DEEP TRENDELENBURG POSITION LEFT SIDE DOWN.



Fig. 2. In the treatment of air embolism it is advisable to place the patient immediately in a deep Trendelenburg position and on his left side. Pure oxygen should be administered.

### TREATMENT

It is generally considered that the re-establishment of circulation in these cases must be accomplished within 4 minutes. The patient must immediately be placed in a deep Trendelenburg position and on the left side (right side up). This alone will permit the circulation to be resumed and the patient to recover in many cases. It is recommended that oxygen be given as soon as possible and maintained until the patient is out of danger. This not only furnishes oxygen which is badly needed because of anoxia but also displaces the nitrogen in the alveoli thus permitting a more rapid absorption of nitrogen from the blood. If these measures are successful in re-establishing circulation, nothing further need be done except to keep the patient in this position for some hours until the gas has absorbed.

If the patient's condition is not immediately improved, that is within a minute or a minute and a half, one may insert a needle into the right ventricle. The right ventricle occupies essentially all of the anterior surface of the heart except for the right auricle high on the right and the left ventricle at the apex and along the left border. Aspiration may be done from several angles but probably best from the left side of the sternum at about the 4th interspace with the needle directed sharply to the right. It is necessary to withdraw the foam and preferably to insert some other solution such as normal salt solution or blood.

If the embolism has occurred in the operating room the patient must be placed in the approved position immediately and without regard to sterile technique. If proper circulation is not immediately re-

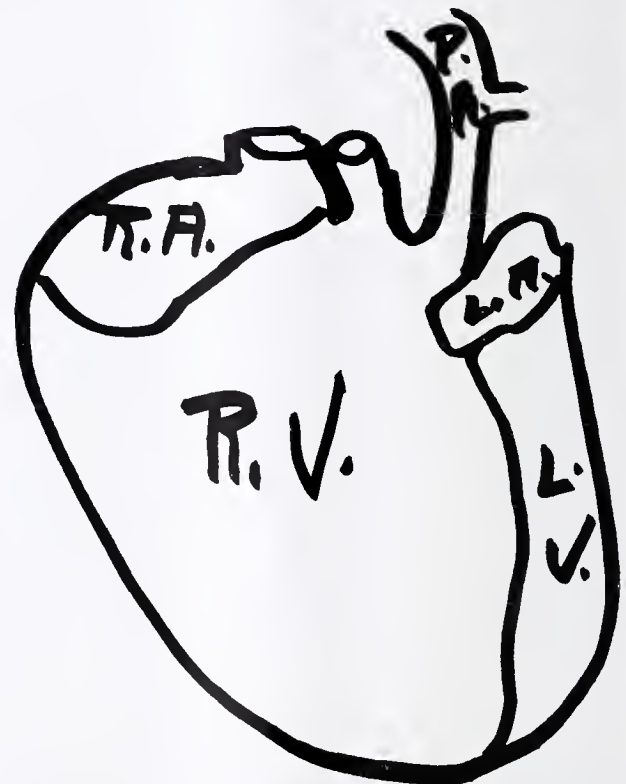


Fig. 3. This diagrammatic representation of the anterior surface of the heart will indicate that by far the greater portion is composed of the anterior wall of the right ventricle. Aspiration of the froth within the right ventricle is indicated when the circulation is not immediately restored by the deep Trendelenburg position with the patient on the left side. A blind aspiration of the heart directed somewhat medially is almost certain to reach the chamber of the right ventricle.



## AIR EMBOLISM

sumed one may place the patient prone and open the left chest in the 4th or 5th interspace as in dealing with a cardiac standstill. One must withhold cardiac massage which obviously would do no good under these circumstances. A direct aspiration of the right ventricle can then be done more accurately. Salt solution, water or blood is injected to replace the same volume of aspirated foam. Cardiac massage is then a perfectly proper and helpful procedure if it is necessary.

In all patients who are improving it is important to remember that they must be kept in this head down position with the utilization of high oxygen for a period of at least several hours and that they must be kept in bed for some hours longer until all air can be absorbed.

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# Religion and Medicine

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The purpose of this paper is to offer an interpretation of the minister's role as a member of the healing team. In order to accomplish this purpose and to insure the integrity of historical development, a brief excursion will be made into the history of the interrelatedness of Medicine and Religion as well as the history of the movement to train a minister to function as a member of the team. After the history of these movements has been sketched, an effort will be made to describe in some detail the role of a clinically trained minister as interpreted in the local frame of reference of Arkansas Baptist Hospital.

The pre-Christian era was characterized by a curious kind of interrelatedness of medicine and religion. There was a great deal of superstition and magic in vogue; there was an extensive belief in demons and evil spirits; there was the socially acceptable union of religion and medicine in the healing temples and the priest-physician. At the same time, there was a growing minority of persons, who refused to function within the pale of religious structure and attempted, through the accumulation of knowledge based upon experience, to treat the human organism in times of ill health.

The early Christian era shook the world with a newly defined concept of love. A direct outgrowth of this ethical ideal was a philosophical anthropology, which ultimately found expression in some of our modern social institutions: the home, schools, hospital, other agencies whose task it is to care for individuals and small groups. This era saw the formulation of an idea which says that every man is of intrinsic worth and should be encouraged to give full expression to his potentialities. Such an idea implies freedom to discover new and better ways of helping man to realize his limits. Such an idea found expression also in the field of medicine.

This is not to say that medicine paused in its evolution, waiting for the Christian

anthropology to develop. On the contrary, medicine was in the full sway of basic scientific procedure: observation and experience. But this is to say that an ethical impetus was added to an already progressive development. One of the most outstanding physicians of this era was Galen (138-201). Somewhat a philosopher, but always the scientist, Galen's work marks a pivotal point in the transition from the ancient to the modern eras.

However, as fate would have it, a disruption in the progressive evolutionary process was to occur. In A. D. 79, Vesuvius erupted and Pompeii was destroyed. The Pestilence of Campagna destroyed tens of thousands daily. Other plagues were experienced in A. D. 125 and 164. During the pestilence of 251, what may have been smallpox destroyed countless persons. The Roman Empire was weakened and fell. It seems that in the times of stress, the people interpreted these fateful experiences as judgments for sin and relied on their superstitions, magic, and so-called divine power to be healed. There was formed a Christian religious medicine in which prayer, laying on of hands, anointment and other ceremonies were regarded as the most important remedies; those to which the faithful should have exclusive or almost exclusive recourse in seeking divine aid for the cure of bodily ills.

Thus, after the Christian era began, there existed for many centuries two concepts of healing: one based upon conformity to religious prescriptions, the other based upon an evolving foundation of scientific experimentation. At times in history these two ideologies merged; at other times, they destroyed one another. Leonardo, the anatomist, worked quietly within the framework of religious dogma; while religious dogma burned at the stake Servetus, the physician, one of the first who described pulmonary circulation.

The history of medicine within the Western world frame of reference during the Middle Ages is similar to the history

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of every other major facet of our civilization, in that a history of any major movement during this time is also a history of religion. A study of religion and medicine for this millennium is a startling story of how primitive emotions can grapple with and oppose truth even to the extent that in the face of scientific fact religious dogmatism would not relinquish its hold on the common man.

But truth cannot be contained within the structure of dogmatism, whether religious, political, or even medical. Truth seeks to express itself in the integrity of the individual investigator. There will be always those brave souls who believe that allegiance to what, to them, is truth is more important than conformance to an inherited dogmatism. So the Renaissance marked a major period in the life of the Western world. The way was paved for the political and religious revolts that were to come. The influence of these revolts is felt even in our day.

This new awakening brought forth a zeal for scientific fact and the scientific method that inevitably ran straight into direct conflict with the magic and superstitions of the day. Descartes (1596-1650), Galileo (1564-1642), Frances Bacon (1561-1626), are but three of the philosopher-scientists who set the pace for the scientific method. At this time, and with the aid of the microscope, Harvey (1518-1657) stated revolutionary concepts concerning the circulation of the blood. Characteristic of the main stream of development was a movement toward a clinical application of scientific theory, which became practical by application to the needs of a patient. Other progressive steps are noted. Surgery advanced; initial work was done in blood transfusion; obstetrics and gynecology had new instruments added to their abilities. Pharmacology was fast becoming a science in itself. With the dawn of a scientific medicine, in the Eighteenth Century, there began a dramatic movement to make available to suffering humanity the resources of healing made evident through the scientific method. An adequate summary of medical progress up to this time would include the observation that medicine became wedded to the natural sciences. In

doing so, it was able to expand into the present institution that it is. It was inevitable, because of the cultural significance and philosophical differences between medicine and religion, that as medicine was wedded to the natural sciences it became divorced from religion.

But the Eighteenth Century was not free of difficulty. Advances were made in studies of human physiology, clinical medicine as a specialty, surgery, pathology, ophthalmology, and even psychiatry. But the religious folk often objected, for example, to the methods of the pathologists study of the deceased and the larger community objected to Pinel's treatment of the mentally ill.

Historically speaking there is no single event that can be held responsible for the divisions between medicine and religion. The stage of cultural evolution, political turns of events, the theories of natural sciences, all were a part of a great division which seemed to climax with the theories of Charles Darwin (1809-1882) and Freud (1850-1939). Throughout the rest of the Century, religion seemed obsessed with the idea that the theories of these men were formulated in the "bowels of evil." Many physician-scientists were alienated from religion due to religious intolerance in the field of ideas. Thus religion made its own bed and slept apart from scientific medicine. Here were two of the most humanitarian institutions ever produced by a society of people, incompatible ideologically.

Religion went its own way and in Protestant America expressed itself in revivalism, theological controversy centering around what was called the Social Gospel, and in denominational exclusiveness. Medicine went its way developing into numerous specialties, each based upon an ever growing accumulation of scientific data, substantiated in clinical experience.

To sketch the development of the various medical specialties would be an impossible task in the brief space here. However, some of the factors contributing to the rise of specialties are important. Facilities of communication made possible quick interchange of new discoveries. American Medical Schools came to be on an equal with schools internationally

known. Microbiological studies, with extensive need for laboratories, were made. The concept of cellular pathology was announced. The results of physiological and biochemical experiment were applied to the explanations of the problems of life and death, of health and disease. The individual in his reaction to disease was studied, with some attention to stress as a possible etiology of certain illnesses.

Other innovations within the field of medicine have been the development of a specialty which seeks to combine the somatic and psychic aspects of disease. Also, there is the factor of a science of interpersonal relations, which seeks to understand a person within the framework of his intrapersonal as well as his interpersonal relations. As these and other advances were converging at this point in the history of medicine, a new philosophical concept in the application of the skills of healing became evident. This concept is known as the healing team.

What has been happening in the religious camp during these years, while medicine was in the phase of specialty development? As previously noted, the turn of the century saw an ever-increasing gap between religion and medicine. Inevitably, the men of science focused their tools of scientific investigation upon a taboo area of man's experience, his religion. One fact that was obvious, as investigative efforts became more accurate, is the simple observation that there may exist some correlation between the biological maturation processes of adolescence and phenomenal, religious conversion experience. Men of no less standing than William James, E. D. Starbuck, and G. Stanley Hall were among those who sought a critical evaluation of religious experience. The straw that broke the camel's back occurred when the suggestion was made that man's actions, religious or otherwise, may be motivated by factors not within the conscious awareness of the individual.

As a result of this controversy, other brave souls sought to expand the knowledge of human experience through the study of abnormal religious behavior. Parenthetically, let it be noted here that the method of a clinical study of pathol-

ogy is basic to scientific medicine. Of course, the idea behind a study of pathological religious experience—the clinical source was usually a mental hospital—was that some steps in religious education would be taken, the purpose of which would be to help the growing child experience something religiously within the wide limits of normality.

Thus in brief, while medicine was coming to be more specialized, religion was becoming more willing to accept a concept of human experience based upon the genetics of the individual, the stress under which he lived, and his adaptive abilities. The religious leaders were asking the question: "How can we help facilitate these elements of human experience, so essential to personal contentment?" The answer came back—through a careful clinical study of human experience, within a structured and controlled environment; in a setting in which the primary purpose of the concentrated effort of the community is the welfare of the people it seeks to serve. In theological education, this is called Clinical Pastoral Education. This is not to mean that all religious leaders have accepted this approach, but the number who have is increasing significantly.

Fortunately, medicine has always taken the position that if a new approach is for the betterment of the patient it is worth trying. Subsequently, the medical profession took the initiative in the movement to include a trained minister as part of the healing team. Doctor Richard Cabot, Chief of Medicine at Massachusetts General Hospital in the early 1930's, personally paid part of the salary of one of the first clinically trained hospital ministers. Doctor Cabot also was co-author of one of the first publications in the field of Pastoral Counseling.

In the nearly thirty years of its development, the field of Clinical Pastoral Education has accumulated a vast amount of publications. Much of this material is composed of scientific data growing out of medical research. Also, there have developed various schools of thought in matters of philosophy concerning the minister's role as a member of the healing team.



In answer to the question, "by what right does the clinically trained hospital minister become a part of the healing team?", the answer is two-fold. First, he is there because the physician requests that he become a team member; the physician also offers his own services in providing the minister with some of his training. It is interesting to know that one of the nation's leading pharmaceutical companies has given a \$10,000 grant, to be used in the clinical training of ministers. This grant comes through the growing demand from the medical profession for trained ministers. Also of interest is the fact that the American Psychiatric Association has organized a separate section in the annual meeting, the purpose of which will be to study the interrelatedness of Psychiatry and Pastoral Care.

Another reason for the clinically trained hospital minister to function as a member of the healing team, is related to the fact that he comes to function within the frame of reference of the scientific method. In this instance the tools of his trade are his cultural role and his ability to participate in interpersonal relations in such a way that the healing resources of the patient are encouraged. This means that there must be a personal philosophical position on the part of the minister that complements the goal of the physician—the patient's welfare; at the same time, this philosophy must not destroy the cultural role of the minister. In other words, the minister is a minister, not a physician.

Before attempting to formulate such a philosophical position, a series of summary statements is indicated. The thesis herein presented, substantiated from the historical sources, follows: (1) Medicine and Religion were very closely interrelated in primitive times in the cultural role of priest-physician. (2) As the Western world evolved the scientific method the inevitable and since demonstrated wholesome separation of scientific medicine and religion occurred. (3) This divorce prevailed through the crucial centuries of scientific discoveries, with both medicine and religion making progress in their separate directions. In medicine this progress expresses itself in our time in the var-

ious medical specialties working as a healing team, within the structure of the modern hospital. In religion there have been attempts to incorporate the scientific data, provided through medical research, into a philosophy which seeks to understand man's motives as well as his actions, to the end that wholesome personalities may be cultivated. (4) Within the past thirty years, medicine has become aware of this "new dimension" in religion, which is really a revival of ancient religious concern; and medicine seeks to utilize the cultural role of the minister in order to facilitate the physician's ultimate purpose—healing.

As an attempt is made to deal with the demands which the medical profession must make upon any minister who attempts to function in this role, a philosophy of healing may be proposed. Modern Medical Science has demonstrated the fact that an individual is a functioning socio-biological unit. He affects the community and the community affects the man. Also, this unit functions as a totality or a whole. Failure of one part of the adaptative machinery effects significantly the total unit. Thus, a philosophy of healing considers the total or whole socio-biological organism. The patient is a person, never a disease. Illness is thought to be a breakdown of the organism's adaptative machinery. This breakdown may be organic, functional, or a combination of both.

Grossly oversimplified, then, healing is any procedure which seeks to aid the inherent capabilities of the socio-biological organism to seek its balance of relative efficiency. This may be aid which comes from any one or combination of the specialties of which Modern Scientific Medicine is composed. Thus, the healing team has as its goal the ultimate concern of the individual whose adaptative machinery has failed. He is a person whose whole being is in jeopardy; because his being is in danger, the whole of him is treated.

But the physician of our time is caught in a maze. His cultural role, with the rather uncomfortable socio-economic demands made upon him, the ever-growing need to keep up with the field of medicine in which he is interested, the insecurities fostered through years of build-

ing a practice in what can become a highly competitive profession, the communities' cultural lag is not providing the physician with adequate environments in which healing can be attempted—these and other factors have contributed to a dilemma. There are limits to physical endurance as well as domestic and wider social responsibilities that demand the physician's time and energies. He also is a person first, a physician second. One possible solution to this dilemma is that the physician has at his disposal the healing team. The physician is the undisputed leader of the team. He is ethically and professionally responsible for the patient's welfare. He must call the signals, map out the plays, and be responsible for the way the game goes. The physician is now adding another member to the healing team: the clinically trained minister.

As suggested previously, there are at least two facets of this profession which enable the physician to utilize the trained minister. These are the significance of his cultural role and his ability to participate in interpersonal stress.

Basically, the minister's role is symbolic of faith, hope, love. He stands as a symbol of confession, forgiveness, and creative living. He stands as a symbol of courage in danger; hope when all hope is abandoned; life, when desire for life seems absent. His is also a role which carries some degree of authority. But in at least one significant way the function of the clinically trained minister is different. That is, he functions within a frame of reference that is based upon a science of interpersonal relations. He uses the cultural role and his ability to function in interpersonal stress in order to enhance the task of the healing team. This ability in interpersonal relations is best evidenced through the skill of leading a person to verbalize significant feelings or emotions relative to himself and the life circumstances in which he is now living. The ability to encourage a person to speak his true feelings implies also the ability to listen in a creative fashion. Moreover there is implied the ability to direct the interpersonal relationship in the direction of tension release; thus, decreasing a real threat to healing processes.

In other words, a clinically trained minister, because of his cultural role and his ability to function in the interpersonal situation, is concerned with the inner world of the patient to the extent that this area of experience may impede or enhance the healing team's ultimate goal. This means that to such a minister the patient-person in his present circumstance in the healing situation is of primary concern. Moreover, in the interpersonal relationship even theological presuppositions become secondary to the healing team's efforts. For fear that it may seem that such an approach is begging the theological issue, let it be clear that this is exactly what occurred in the experience of Jesus. A person took precedent over ideas in His ministry. Also, He once said that a ministry to a person in His name was a ministry to Him.

What has been attempted in this paper is to establish some lines of communication relative to the clinically trained minister who becomes a member of the physician's healing team. He is there because, historically, physicians requested his services. But the physician also has the right to expect the minister to abide by the rules of the game; of which scientific and professional credibility are important.

A warning footnote is in order. The ultimate goal of the healing team remains constant, the patient's progress. The tactics of the team may vary. As more members are added to the team the potential for error is increased; but, by the same token, the potential for success is also increased.

The question now arises relative to a clinical resource available in Arkansas for a minister to receive the type of training implied by the term Clinical Pastoral Education. Such a resource is found at Arkansas Baptist Hospital, Little Rock. Fulltime pastoral internships are being organized, extending from two to twelve months. The ultimate aims of this program are herein defined.

1. To enable the student to gain understanding of people, their deeper motivations and difficulties, and their emotional and spiritual strengths and weaknesses.



2. To help the student develop effective pastoral methods for ministering to people, recognizing his unique resources, responsibilities, and limitations as a clergyman.

3. To help the student learn how to work cooperatively with representatives

of other professions and to utilize community resources.

4. To encourage a desire for further understanding of religion and life, particularly such as may be obtained through appropriate research.

## ◆ What's NEW ◆

### Poison Ivy Dermatitis

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From the dermatological standpoint, poison ivy is the biggest plant nuisance in this country. Different investigators report different percentages of incidence of sensitivity to poison ivy but it is likely that approximately 50 per cent of the white population is sensitive to this plant and over one million cases are seen and treated annually in the United States. The purpose of this paper is not to present any new or original ideas but to review current thinking in terms of diagnosis and treatment of this pesky disease.

Botanically, poison ivy belongs to the Anacardiaceae family most of whose members are tropical or subtropical and includes many useful plants such as cashew nuts, pistachio nuts, mango, and lacquer tree. In this country, the two "poison" members of the family are poison ivy and poison sumach. Fortunately, sumach is very limited in distribution and its importance as a plant nuisance is negligible. Poison ivy is the name applied to a group of plants which are closely related and which, botanically, are known as *Rhus Radicans*. There is considerable controversy as to whether poison oak is an independent species or simply a variety of poison ivy. Experienced observers can morphologically distinguish between the two but, since accuracy serves no practical purpose

in this instance, the two will be considered as one. Certainly the eruptions are the same and the plants cannot be identified on the basis of the type of eruption. Furthermore, sensitivity to one usually means sensitivity to both.

The dermatitis-causing part of the plant is the sap or resin which is distributed via resin canals situated in the roots, stems, leaves and fruit. Shelmire states that the dermatitis-producing principle of poison ivy is not an oil but a dialyzable fraction of the oleoresin soluble in water and urine. The leaf must be bruised or crushed to produce a dermatitis and uninjured leaves will not produce dermatitis even when deliberately placed on the skin of persons known to be sensitive to poison ivy. The poison ivy principle is non-volatile but it can be carried on dust or smoke particles which come in contact with the broken leaf. A severe poison ivy dermatitis can result from standing in the path of smoke from a fire containing the leaves or bark of the plant. Animals such as cats or dogs often act as carriers by brushing against the plant and transferring the antigen to their fur. The unsuspecting animal lover then pets the animal, transfers the antigen to his fingers, and then develops a recurrence of poison ivy dermatitis although he has most carefully avoided contact with the plant.

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The peak incidence of poison ivy dermatitis in the spring and early summer is probably attributable to; (1) the leaves are more tender and more easily bruised or crushed; (2) the natural increased incidence of outdoor living and playing at this time of year; (3) the known sensitive individuals is not so wary as he becomes as summer progresses and; (4) the debatable possibility that some desensitization or "hardening" occurs with repeated attacks and contacts.

The individual's sensitivity varies somewhat with age and the intensity of sensitivity tends to decline as the individual becomes older. The speed of decline is usually proportionate to the initial degree of sensitivity; i. e., the extremely sensitive patient can generally be expected to have some degree of sensitivity throughout his life whereas the mildly sensitive individual may completely lose his sensitivity in later life.

The diagnosis of poison ivy dermatitis is the diagnosis of *Dermatitis Venenata* which may be defined as an acute inflammation of the skin caused by the external application of various substances of animal, vegetable or chemical nature characterized by redness, swelling, vesicles and bullae and accompanied by varying degrees of itching, burning and stinging. There is no distinct clinical entity which may be unequivocally diagnosed as poison ivy dermatitis on the basis of clinical appearance. However, in the spring and early summer, the percentages are in ones favor when a diagnosis of poison ivy dermatitis is made on the basis of clinical evidence of a dermatitis caused by vegetation. In typical ivy dermatitis the inflammation begins, as a rule, in from a few hours to a few days after contact with the plant but generally occurs within twenty-four to forty-eight hours. It is accompanied by erythema, swelling, vesicles, bullae and a serous discharge when the lesions rupture. Much swelling occurs in areas where the tissues are lax such as about the eyes and in the genital area. The vesicles may be small and grouped or may be large and discreet. They may be irregularly arranged in a linear fashion outlining the area where the plant rubbed against the skin. This linear arrange-

ment of vesicles has been misinterpreted by many who have believed that the fluid content of the vesicles contains the antigen and causes new dermatitis when vesicles rupture and the fluid runs along the skin. It has been repeatedly demonstrated that the blister fluid contains no antigen and the belief that the dermatitis spreads through rupturing of the vesicles is without merit. It is true that such linear lesions can be produced by scratching for in this way the antigen on the skin can be spread in a linear fashion or antigen on the fingers may be deposited in linear arrangement.

Ivy dermatitis usually occurs in the areas of the skin not covered by clothing such as the hands, wrists, forearms and face. If the victim is wearing shorts or bathing trunks at the time of contact with the plant, considerably more skin area may obviously be involved.

Most cases of ivy dermatitis run an acute course and subside without sequelae in one to three weeks. Some cases, by the development of new lesions due to recontact to the antigen, may be prolonged over a course of many weeks.

Before discussing treatment of ivy dermatitis it would be well to comment on the value of mechanical efforts to remove the ivy antigen from the skin after known exposure has occurred. Washing of the skin with soap and water after contact with poison ivy has been recommended by many. Shelmire was unable to significantly alter the dermatitis with soap, water and scrubbing even when such measures were instituted immediately after exposure and continued for five minutes. Klingman applied bruised leaves to the skin of known-sensitive patients and then washed the area vigorously with soap for two minutes after one minute, five minutes, ten minutes, thirty minutes and one hour. He concludes that in the highly sensitive individual no good is accomplished unless the cleansing is done in less than five minutes after the contact. Under ordinary field conditions, washing of the skin would appear to have very little value in preventing dermatitis. These same authors also concluded that so-called "protective creams" have no appreciable value in preventing dermatitis.



## POISON IVY DERMATITIS

The treatment of poison ivy dermatitis may be divided into two aspects; (1) Topical and (2) Systemic.

(1.) Topical therapy: Just as there is nothing specific about the clinical picture of poison ivy dermatitis, so, also, is there nothing specific in the way of topical therapy. The treatment of this condition is the same as the treatment of any acute contact dermatitis and calls for the use of time honored methods of treatment such as cool wet dressings, bland and soothing lotions, and "tincture of time." The choice of wet dressings to be used is a matter of individual preference. There is little difference in the value of boric acid solution, potassium permanganate solution, Burrow's solution, or aluminum subacetate solution. Our preference is aluminum subacetate solution in which one teaspoonful to one pint of water is the proportion used. The solution should be cool-to-cold and not warm or hot. Old sheeting is the cloth of choice in applying of wet dressings. The strips of sheeting should be folded three or four layers thick and should never be covered with rubber, plastic, etc. after being applied. Covering prevents rapid evaporation and defeats one of the main purposes of the wet dressings. The cloth should be kept constantly wet for approximately thirty minutes and such treatments should be done several times daily.

The lotion to be used after the wet dressings is also a matter of individual preference. One effective lotion which may be safely used is:

Rx Menthol	0 24
Phenol	0 48
Zinc Ox. Powder	40 00
Talc	40 00
Olive Oil	18 00
Glycerin	18 00
Aqua Distillata qs. ad.	180 0

This lotion can be most effectively applied with a soft three inch brush.

The inevitably present itching in these patients frequently drives the patient and physician to frantically seek an effective remedy. It is well to remember that treatment of the pruritis is the treatment of the dermatitis causing the pruritis. No

highly effective topical antipruritic has yet been developed.

One of the mistakes commonly made seeking to relieve itching is the use of topical anesthetics such as Surfacaine or Surfadil. While it is true that some temporary relief may be obtained through the use of such applications, it is also true that this group of drugs are generally frequent sensitizers and the patient becomes allergic to them after a few applications. One is then faced with the unpleasant fact that his treatment has produced a dermatitis as severe or, possibly, more severe than was the original dermatitis. Therefore, such topical anesthetics should either be used with extreme caution or not used at all.

The use of topical antihistamines as an antipruritic has also enjoyed a degree of popularity in recent years. However, there is no good evidence that topical antihistamines have any value in either the treatment of ivy dermatitis or of the pruritis associated with ivy dermatitis. As a matter of fact, the author does not believe that topical antihistamines have *any* therapeutic value.

The topical corticosteroids have been used with great enthusiasm by many in recent years but, in the opinion of most careful observers they offer little or nothing of therapeutic value which cannot be as rapidly and much more economically obtained by the time proved methods set out above. Klingman states that "in carefully controlled studies with a variety of contact allergens given at threshold concentrations so as to provoke a borderline dermatitis, we have been unable to demonstrate any moderating effect of topical hydrocortisone regardless of frequency of applications, even when the treatment was begun ten minutes after application of the antigen. The agents used included prednisolone, hydrocortisone, fludrocortisone and several soluble salts of hydrocortisone derivatives."

(2.) Systemic therapy: The treatment of acute contact dermatitis has been greatly enhanced by corticosteroids and corticotropin. The majority of cases will be considerably benefited by the equivalent of 100 mg. of cortisone or 40 units

of corticotropin daily. Two new compounds of cortisone and hydrocortisone have been developed during the past year and are of considerable value in the systemic treatment of acute dermatitis. These steroid tablets are manufactured by Upjohn (Medral), Lederle (Aristocort), and Squibb (Kenacort). Kenecort and Aristocort are identical. Tablet for tablet, these three compounds do as much and probably more than their parent compound, Prednisolone. In severe, acute ivy dermatitis, I give 8 mg. of Medral every eight hours to six doses and then reduced the dosage to 4 mgs. every eight hours for approximately twelve doses. Such a routine will greatly enhance other therapy being used but it should be emphasized that the use of systemic steroids is not recommended in the routine treatment of ivy dermatitis and that this does not in any way replace the need and value of intelligent topical therapy. It simply supplements to a great degree its value.

The antihistamines are of no value in the systemic treatment of ivy dermatitis other than the mild antipruritic side effect which is obtained with some, such as Benadryl Hydrochloride, when given by mouth.

The use of antigen therapy of acute poison ivy dermatitis is mentioned only to condemn it. This refers to the "poison ivy shots" which remain popular in some areas. Klingman states that "the administration of an allergen which is the cause of an already existing dermatitis is irrational and hazardous. This principle is so paramount in dermatology that it is al-

most a universal rule to postpone patch testing during an acute allergic contact dermatitis." The use of such therapy is likely to not only produce intensification of the dermatitis but is also likely to produce serious systemic complications. Poison ivy "shots" have absolutely no place in the treatment of poison ivy dermatitis.

Efforts to desensitize the poison ivy sensitive patient have, to date, been ineffective. There is some evidence that the degree of sensitivity can be reduced in some patients but this is not a consistent result. The only effective means of prophylaxis is to teach the patient to recognize the various forms of poison ivy and to avoid contact with them.

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**A TEACHING SEMINAR**  
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**UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE**

## What's Wrong With Spinal Anesthesia?

C. W. SHAFER, M.D.\*

The use of spinal anesthesia has probably provoked more argument during the past few years than has any other single type of anesthesia since the condemnation and abandonment of chloroform. There are those individuals who are so opinionated concerning its use to preclude intelligent discussion. There are certain areas in this country where our legal cohorts and the lay public have relegated this technic to a procedure of the past. The basis for those beliefs and legal rulings, in our opinion are neither justified nor fair. They have been an outgrowth of improper usage of the method and lack of public information on the subject.

In reflecting upon the past years of spinal anesthesia, the perfection of technic and control was accomplished in a shorter number of years than were similar good technics in the general anesthetic procedures. However criteria for its use have not been delineated carefully enough and regard for adequate levels has not been considered in the proper perspective, or has been disregarded.

There are three major reasons why patients object to spinal anesthesia. The first and most important is the patient's unwillingness to be awake or a previous unhappy experience with spinal. The second is the patient's fear of the method and thirdly, the physician's failure to appreciate the limitations or the proper application of spinal anesthesia. Because this latter objection probably led to the development of the first two objections in so far as the general public is concerned, they will be discussed in the reverse order.

Spinal anesthesia, we are speaking of the so-called "one shot" type, has definite limitations as to its applicability and effective time. A successful spinal anesthetic must be adequate in both time and level so that the contemplated surgery can be accomplished without pain and without alarming physiological upset within the time the anesthesia is available. When these principles, one, or all, are violated it must be considered that the anesthetic procedure is not satisfactory. There are some few exceptions to this however.

In order to calculate the necessary height to which a spinal anesthetic must be raised to accomplish painless surgery one must have the level above the dermatomes involved in the skin incision. Afferent visceral autonomic fibers have many ramifications and viscera receives its innervation from unbelievably high levels at times. The vagal tracts are not blocked and thus there remains an avenue for afferent impulses which relay discomfort. The uncomfortable and alarming reactions which occur during gastric resection under spinal anesthesia alone are well known, thus it behooves us to have some knowledge of how high to block. Very high levels of sensory and motor blockade are to be avoided; sympathetic blockade will be even higher. High sensory levels coupled with inadequate respiratory exchange resulting from paralysis of all or part of the respiratory musculature precipitates fright and panic in the patient. A high sympathetic blockade will reduce effective blood volume, cardiac refill and output, thereby lowering blood pressure and hepatic, renal and cerebral blood flow. We strive for levels high enough but no higher than necessary to accomplish the desired results. If

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the level of anesthesia is inadequate the patient is in pain, if it is too high then the physiological reason for using spinal has been cancelled.

Patients should have the anesthetic procedure explained to them before premedication is given and re-explained on arrival in the operating room. Usually poorly sedated patients are frightened patients, therefore we try to sedate them well. Some manner of peace and quiet should prevail as soon as the operating suite is reached. Loud talk by members of the operating team will only produce more fear and anxiety for the patient. If the preoperative medication has not been sufficient, additional barbiturate, narcotic or promethazine are given intravenously.

Improper management of the patient after the anesthetic drugs have been injected will frequently result in an "unacceptable" anesthetic experience for the patient and the surgeon. Careful attention to position of the patient with concern for his comfort is of prime importance lest he become restless and uncooperative after a short time. Blood pressure determinations are made frequently, and observations as to sensory level should be made often during the first twenty minutes in order to keep the "spinal level" from creeping too high. Blood pressure falls of twenty to twenty-five per cent may be noticed during the first twenty minutes or so. This is usually a result of sympathetic block and pooling of blood in paralyzed skeletal muscle. Judicious use of small doses of vasopressors and of oxygen will control the nausea and apprehension resulting from blood pressure fall. Additional small amounts of pentobarbital or similar drug will render the patient more tranquil and more easily controllable. Recently we have used promethazine and have found it to be very satisfactory.

Patients who are treated properly and with consideration, and who are handled properly before and during a spinal, have little fear or resistance when approached about a second such procedure. However the person given rough, unexplained treatment with an inadequate level will in no uncertain terms refuse you or anyone else

in so far as a second spinal anesthetic is concerned, and justifiably so.

The patient's fear of paralysis, a bad back, headache etc., is reasonably well grounded. A few years ago, and even yet, some physicians hold that the only contraindication to spinal anesthesia is the inability to make a successful lumbar puncture. There are others who list definite and relative contraindications. Still others say simply that there is no indication for spinal anesthesia. We feel that there are definite contraindications to spinal anesthesia. They are as follows:

1. Infection or skin contamination near or at the site of the proposed lumbar puncture. Pathogenic bacteria may be carried into the subarachnoid space. The possibility of the development of arachnoiditis or meningitis following a lumbar puncture is ever present.

2. Pre-existing cord disease. Numerous reports indicate that neurological sequelae from spinals have manifested themselves where previous cord disease existed. The spinal may have precipitated a pre-existing condition that would have become evident in time without any intervention. In face of old cord injury or disease, even though quiescent, it is best not to use spinal anesthesia.

3. In patients who are afraid of or do not want a spinal anesthetic. Forced or imposed spinal anesthesia provides a fertile field for medicolegal action.

4. Depleted blood volume. Patients who are hypovolemic from acute blood loss tolerate spinal anesthesia poorly. As mentioned above spinal anesthesia will produce sympathetic blockade which will further reduce effective blood volume. These patients tolerate general anesthesia better than they do spinal.

Spinal anesthesia is relatively simple to induce. At times it is a bit difficult to control but with some knowledge of limitations and mechanics a relatively effective, safe technic can be perfected in a short time. Knowledge of the weight or baricity of the anesthetic solution used, and dosage ranges in various types of procedures to be done can be learned very quickly; however, control of the patient



## WHAT'S WRONG WITH SPINAL ANESTHESIA?

after the drug is injected is more important. The management and treatment of complications are simple if constant vigilance is maintained.

The immediate complications of spinal are few and they are usually not difficult to control. The treatment of hypotension and respiratory depression have been mentioned. Nausea can usually be controlled by sedation, adequate control of blood pressure, or by the administration of oxygen. In the well sedated patient nausea is not worrisome.

The late complications of spinal are of a more disturbing nature and are often-times more difficult to eradicate. These can be divided into two general groups: (1) Those due to trauma to nerve root or cord itself (2) Those due to trauma to vertebrae, dura or contiguous structures.

In the first category fall several types of involvement of spinal nerves or cord, varying from temporary paresthesias to permanent disabling neurological lesions. Meningitis and arachnoiditis are occasionally reported. Fortunately all of these complications are rare, probably occurring once for each 1500 to 2000 spinal anesthetics.

Backache we formerly did not consider, but it actually does seem to occur following many of the more traumatic lumbar punctures. Headache seems to be more prevalent in the younger age group; it is higher in obstetrical patients than in surgical patients of the same age. The incidence is greater when large bore needles are used than when smaller sizes are used. The treatment of both of these conditions are prophylactic and symptomatic.

In order to make spinal anesthesia safer for the patient and a more pleasant experience for all concerned the following points are offered for consideration:

1. Do not transgress on the four definite contraindications.
2. Explain to the patient, before he is medicated, what you are going to do. Anticipate by explanation his numbness, heaviness, etc. Further allay his fears by good sedation and gentle handling.
3. Use good surgical technics in preparing the back. Clean it well and clean

it wide. Use sterile equipment, sterile gloves, and keep them that way. There are no antibodies in spinal fluid.

4. Be deliberate but gentle in performing the lumbar puncture, in order to minimize trauma. The use of small bore needles will reduce the incidence of headache.

5. Autoclave all drugs to be given intrathecally. Soaking in an antiseptic solution is misleading. If a clear solution is used as the sterilizing agent, the liquid in the ampoul may interchange with it, thus sterilizing solution may be injected. If autoclaving is impossible use coloring (methylene blue, etc.) in the sterilizing solution.

6. Pay attention to back contours and the position of patient and table. Get enough level but no more than you need.

7. Use only the amount of local anesthetic drug needed for the contemplated procedure. High concentration and dose prolong the anesthetic time very little, yet they add to the likelihood of neurological complications.

8. Sedate the patient more if needed. A sleepy patient is a happier patient.

9. Keep blood pressures workable by judicious use of vasopressors, oxygen, etc.

10. If sufficient intercostal muscles are involved to impair respiration then assist the breathing by administering oxygen with a bag and mask.

11. If the patient is having pain don't doubt his word, give him something to put him to sleep. We have no particular preference in agent used.

### CONCLUSION

After many years of using spinal anesthesia, we feel that if given to selected patients, and properly conducted, it is still the anesthetic of choice for lower abdominal and lower extremity surgery. We probably are too conservative in its use and too rigid with our criteria. There must be some logical reason why patients and physicians alike are so critical of spinal anesthesia. Many of these reasons have been presented and an outline of how to stay out of trouble with spinal has been offered in the hope that this type of anesthesia may continue as a valuable adjunct to surgery.

# The Achievements of ARIST

**...in Skin Diseases:** In a study of 26 patients with severe dermatoses, ARISTOCORT was proved to have potent anti-inflammatory and antipruritic properties, even at a dosage only  $\frac{2}{3}$  that of prednisone<sup>1</sup>. . . Striking affinity for skin and tremendous potency in controlling skin disease, including 50 cases of psoriasis, of which over 60% were reported as *markedly improved*<sup>2</sup>. . . absence of serious side effects specifically noted.<sup>1, 2, 3</sup>

**...in Rheumatoid Arthritis:** Impressive therapeutic effect in most cases of a group of 89 patients<sup>4</sup>. . . 6 mg. of ARISTOCORT corresponded in effect to 10 mg. of prednisone daily (in addition, gastric ulcer which developed during prednisone therapy in 2 cases disappeared during ARISTOCORT therapy).<sup>5</sup>

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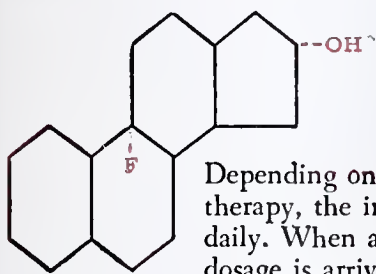


# ARISTOCORT<sup>®</sup>

Triamcinolone LEDERLE

**...in Respiratory Allergies:** "Good to excellent" results in 29 of 30 patients with chronic intractable bronchial asthma at an average daily dosage of only 7 mg.<sup>6</sup>... Average dosage of 6 mg. daily to control asthma and 2 to 6 mg. to control allergic rhinitis in a group of 42 patients, with an actual reduction of blood pressure in 12 of these.<sup>7</sup>

**...in Other Conditions:** Two failures, 4 partial remissions and 8 cases with complete disappearance of abnormal chemical findings lead to characterization of ARISTOCORT as possibly the most desirable steroid to date in treatment of the nephrotic syndrome.<sup>8,9</sup>... Prompt decrease in the cyanosis and dyspnea of pulmonary emphysema and fibrosis, with marked improvement in patients refractory to prednisone.<sup>10,11,12</sup>... Favorable response reported for 25 of 28 cases of disseminated lupus erythematosus.<sup>13</sup>



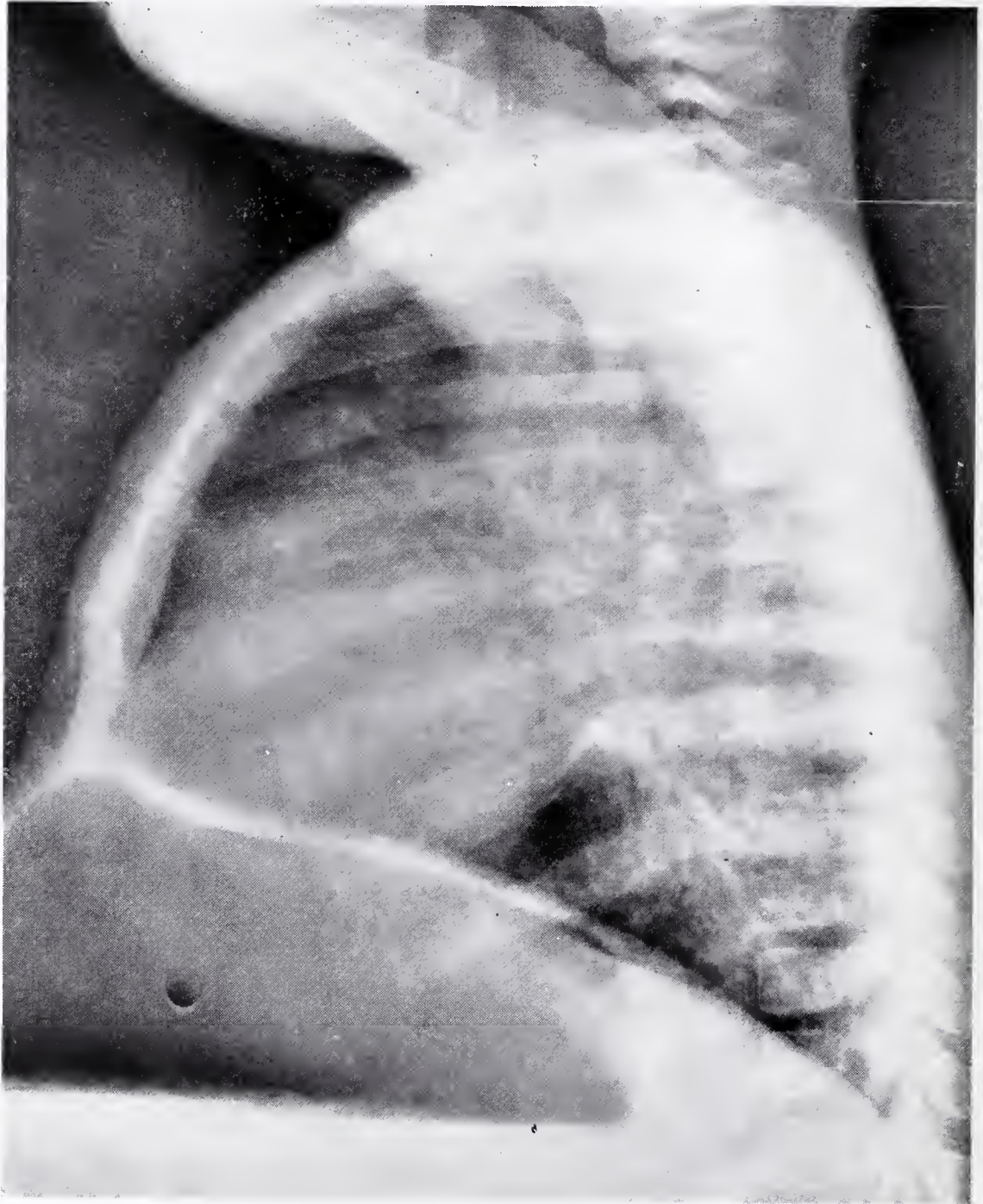
Depending on the acuteness and severity of the disease under therapy, the initial dosage of ARISTOCORT is usually from 8 to 20 mg. daily. When acute manifestations have subsided, maintenance dosage is arrived at gradually, usually by reducing the total daily dosage 2 mg. every 3 days until the smallest dosage has been reached which will suppress symptoms.

Comparative studies of patients changed to ARISTOCORT from prednisone indicate a dosage of ARISTOCORT lower by about  $\frac{1}{3}$  in rheumatoid arthritis, by  $\frac{1}{3}$  in allergic rhinitis and bronchial asthma, and by  $\frac{1}{3}$  to  $\frac{1}{2}$  in inflammatory and allergic skin diseases. With ARISTOCORT, no precautions are necessary in regard to dietary restriction of sodium or supplementation with potassium.

ARISTOCORT is available in 2 mg. scored tablets (pink), bottles of 30; and 4 mg. scored tablets (white), bottles of 30 and 100.

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# What Is Your Diagnosis?



**CLINICAL DATA:** Chronically ill, 15 mo. WM, with history of diarrhea, poor development, cough, and difficulty breathing since age 6 months. Later developed cyanosis and edema. P.E. bilateral moist rales and ronchi throughout both lungs. There was clubbing of fingers and toes, and cyanosis of hands and feet. Stools were yellow and foamy. He ran low grade fever.

**FOR ANSWER SEE PAGE 100**



# Editorial

## *The Tissue Committee*

R. B. ROBINS, M.D.\*

It is the author's impression that tissue committees have done much to improve the quality of patient care where they have operated properly. We found one example of a 75 bed hospital where over 300 hysterectomies were done in one year. According to pathological reports most of them were unjustified.

Three years later this hospital was fully accredited and the total number of hysterectomies done in that year in that hospital was 38, and all were justified. This is a glaring, outstanding example and is not true, of course, of most of the hospitals in the United States. We are seeing a diminishing number of hysterectomies being done in women in the child-bearing age for no pathology, a diminishing number of suspension operations, a lowering of the primary caesarean section rate, and better work-ups of cases before operation resulting in fewer unjustified operations.

Those who serve on tissue committees are rendering a great service to the profession and to the American public.

## *Traffic Accidents*

C. LEWIS HYATT, M.D.\*\*

Each year in the United States about 40,000 persons are killed in traffic accidents. About 2,000,000 individuals are injured, and of this number approximately 100,000 are totally and permanently disabled. The economic waste is many hundreds of millions of dollars in hospital, medical, and nursing care, loss of time, and property damage. There is no way to estimate the pain and anguish of those injured and their families. It is roughly estimated that some one in every family in our land will be killed or injured this

year in a vehicle accident. This means your family and mine.

Traffic accidents, constituting over forty per cent of all fatal accidents each year, have become a major medical and social problem. The very best thought and action which we can muster should be applied against this tragic situation.

Although there are many aspects to the overall problem with no single simple solution, two of the major factors involved in fatal traffic accidents are speed and drunken driving. Almost one-fourth of all persons involved in fatal accidents in 1955 had been drinking. Indeed, a study in a New York county revealed that alcohol was a factor in forty-six per cent of all traffic fatalities.

To combat this increasingly serious problem, the following suggestions are recommended for serious consideration:

(1) Generally more strict enforcement of all regulations concerning speeding, drunken driving, drivers' licenses, mechanical safety of vehicles, unfenced livestock on highways, and all other existing traffic regulations dealing with safety.

(2) Driver training courses—possibly as a compulsory part of public school education and required prior to obtaining a driver's license.

(3) Certificate of the physical condition of all applicants for drivers' licenses with provision for re-examination at stated intervals of say three years.

(4) The building of public demand and acceptance of safety and economy in auto construction rather than speed and power, and the installation of all proven safety devices and equipment in cars.

(5) The placing of a device or surface strip across the highway which will make a noise when crossed to alert or awaken sleepy drivers. Such a mechanism or strip might be placed in long straight highways during construction at intervals of possibly five miles.

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## Medicine in the News

### Fifty Year Club Breakfast

The Fifty Year Club had their annual breakfast May 6th in connection with the annual session at Hot Springs. The invocation was given by Dr. L. H. McDaniel of Tyronza. Dr. Jabz F. Jackson of Newport spoke extemporaneously and this was enjoyed by everyone. Automatically succeeding Dr. E. J. Byrd, Camden, as president is Dr. A. B. Tate of Russellville. Dr. T. E. Rhine of Thornton was elected president-elect. Dr. J. H. McCurry of Cash is the secretary of the Club.

### Officers Ark. Radiological Society

At the annual meeting of the Arkansas Radiological Society, the following were elected officers for the coming year: W. E. Gray, Hot Springs, President; B. A. Rhinehart, Little Rock, Vice-President; E. A. Mendelsohn, Fort Smith, Secretary-Treasurer.

### Conference on Cancer

The Third Annual Conference on Cancer sponsored by the American Cancer Society, Arkansas Division, was held at the Arlington Hotel in Hot Springs, Ark., on May 4, 1958. Dr. Jean C. Gladden, chairman of the Board of Directors, presided. The following program was presented: "Exfoliative Cytology and Uterine Cancer" by Cyrus Erickson, M. D., Department of Pathology, Univ. of Tennessee Medical School; "Women and Cancer" by Willis Brown, M. D., Head, Department of Obstetrics and Gynecology, University of Arkansas Medical School; "Problems Involved in a Mass Survey" by Albert S. Koenig, M. D., Pathology, Fort Smith, Arkansas.

### Medical Assistants

The fourth annual convention of the Arkansas State Medical Assistants Society was held at the Goldman Hotel in Fort Smith, May 17th and 18th. Miss Mary Nell Eupor of Fort Smith, President, presided. Mrs. Lucille Swearingen, Bartlesville, Okla., president-elect, American As-

sociation of Medical Assistants was an honored guest and installed the following 1958-59 officers: Mrs. Maudine Dollarhide, president, Crossett; Mrs. Phyllis Haley, president-elect, Texarkana; Mrs. Frances Reibe, secretary, El Dorado; Mrs. Lettie Ward, treasurer, Texarkana.

### AMA Recommends Mortgage Guarantees for Nursing Homes, Hospitals

Testifying for the American Medical Association, Dr. R. B. Robins has recommended to the Senate that the Federal government authorize mortgage guarantees for proprietary as well as public and non-profit nursing homes. The same recommendation was made previously to a House committee. Dr. Robins, of Camden, Ark., is a former vice president of the AMA and a former president of the American Academy of General Practice.

Dr. Robins, appearing before a Senate Banking and Currency subcommittee, described the AMA's century-long efforts to solve some of the problems of the aged, and noted that the Association now has three committees actively at work in this field. This interest of medicine, he said, "continues right down the line to the family physician who is on the scene when the various medical crises occur in the lives of older people." He explained that most of the aged population need a certain amount of skilled nursing care and medical care, but not necessarily expensive hospital care. They could receive "the maximum professional attention their conditions call for" in a less expensive facility — a properly constructed and operated nursing home, where professional medical and nursing care would be on hand or readily available.

Proprietary nursing homes currently care for 71 per cent of nursing home patients, but they have trouble financing construction and equipment because they are "one-purpose" structures that are not appealing as an ordinary commercial risk, Dr. Robins said.

The role of the Joint Council to Improve the Health Care of the Aged, in which the AMA is cooperating with the American Hospital Association, the American Dental Association and the Ameri-



can Nursing Home Association was outlined by the witness. He said its long-range goal is better health care for all the aged, and its most immediate concern "is working out answers to meet the financial and social problems that accompany chronic illness."

Specifically, he stated that the American Medical Association, through its Board of Trustees, "has approved and will support a government-insured loan program of the FHA type for non-governmental hospitals and nursing homes, whether their ownership is of a non-profit or proprietary character."

### **Editor Appointed for AMA Newspaper**

**Chicago**—The American Medical Association today announced the appointment of an editor for its new publication "The AMA News."

Jim Reed, formerly executive editor of the Topeka Daily Capital, assumed his new duties on June 2, according to Dr. F. J. L. Blasingame, the AMA's general manager.

To be published every two weeks by the association, the 16 page newspaper will feature nonscientific news of special interest to the medical profession.

### **Medical Schools Plea for Higher Allowance for Overhead Costs**

A strong plea has been made to the Senate Appropriations subcommittee for allowing up to 30 per cent for overhead costs in carrying out research programs with federal funds. The case for medical schools was presented to the subcommittee by Dr. John B. Youmans, dean, Vanderbilt University School of Medicine, and immediate past president, Association of American Medical Colleges. The administration asked for an increase to 25 per cent but this was denied by the House. The matter can still be adjusted by the Senate, in which case the bill would go to conference for a possible compromise.

### **Three-Year Extension of Hill-Burton Approved by House Unit**

The Hill-Burton hospital construction program would be continued for three

years beyond June, 1959, under terms of a bill (H. R. 12628) introduced May 22 by Rep. John Bell Williams (D., Miss.). The action came immediately following a unanimous vote of his House Interstate health subcommittee supporting the principle of a three-year extension. The full committee undoubtedly will report the bill favorably to the House.

### **AMA Emphasizes Importance of Health in Future Civil Defense Setup**

American Medical Association, in a letter to Chairman Holifield of a House Government Operations subcommittee, has urged that top level status be given health activities in any new organization dealing with civil defense. The subcommittee has before it a presidential reorganization plan that would merge Federal Civil Defense Administration and the Office of Defense Mobilization.

General Manager Blasingame told the subcommittee the AMA believes the federal civil defense program should be strengthened, but that "the method of accomplishing this is a matter for determination by the Congress with the advice and assistance of the President and the state governments . . ."

### **Administration Opposes Conference On Aging, Separate Bureau**

Testifying before a House Education and Labor subcommittee, two spokesmen for the Eisenhower Administration opposed setting up a new bureau or commission to handle problems of the aging, and also a proposal to request the President to call a White House Conference on the subject. Witnesses were Assistant Labor Secretary Newell Brown, who also is chairman of the inter-agency Federal Council on Aging, and Dr. Robert H. Hamlin, assistant to HEW Secretary Folsom.

Mr. Brown outlined all current federal efforts to help the aged, and said the agencies "have hold of" the problems, "and are in no sense complacent about them." He described how the Council coordinates work in this field, and gave the following specific reasons why the administration didn't favor any of the bills: 1. The Council can accomplish more than a new

bureau, because it already is at work on the problems, it has access to all resources of the various U. S. agencies and departments, and it does not add the administrative complications that would come with a new bureau. 2. Conferences now are being held, and "there is a strong case for believing" that the proper course is to allow the President to decide "the time and subject matter" for further conferences. 3. While a commission might prove valuable later, now is not the time to set one up.

Dr. Hamlin repeated many of Mr. Brown's arguments, and on the question of a separate bureau declared:

"This in essence could result in a centralization of existing services and an abrogation of the sound principle of functional and decentralized organization utilizing the manifold resources inside and outside the federal government . . . If and when there should appear to be need for further increase in federal services, we firmly believe that it should be primarily through an expansion of these existing programs—not through the addition of new ones with new organizations . . ."

### **Medical School Hearings End; Executive Sessions Begin**

The health subcommittee of the House Interstate Committee concluded hearings April 29 on a variety of bills for federal construction grants to medical schools. The next day it began executive consideration of three other health related measures (chemical additives in foods, milk standards and redefining chemical preservatives), and prepared to tussle with the medical school bills. Chairman John Bell Williams noted the hearings were ending with a major question still to come—the Powell amendment which would deny federal funds where segregation is practiced.

The subcommittee has the job of writing a bill that will come close to satisfying a variety of views on medical school aid. No witness heard during the three days raised any objection to federal aid, but the same can't be said for Congress.

### **AMA Asks More Regard for Safety Factors in Auto Construction**

"In recent years safety has generally been ignored in favor of other developments" in auto construction, the American Medical Association has told Congress. In the past, it said, efforts to induce the industry to accept such safety devices as built-in seat belts, crash padding and improved steering wheels "have met with little success." The Association's views were presented to a traffic safety subcommittee of the House Committee on Interstate and Foreign Commerce by Dr. Fletcher D. Woodward, chairman of the AMA's committee on medical aspects of automobile injuries and deaths.

Dr. Woodward took part in a panel discussion of the proper role of the Federal government in bringing about greater concern for human safety on the part of the authorities, the manufacturers and the public. Represented also were the auto industry, psychiatrists and psychologists, traffic control experts and the Air Force, which has done extensive research in the cause of accidents.

Dr. Woodward outlined work already under way and projected by his committee, including providing doctors with technical information so they can inform patients as to their driving limitations, a guide book on fitness to drive, a pamphlet for the public on medical aspects of driving, development of better standards for driver licensing and a study on design features of automobiles.

### **Medical Educators Urge Action On Medical School Aid Bills**

Leading medical educators spent two days before the health subcommittee of the House Interstate Committee this week to plead the case for federal matching grants for expansion and construction of medical schools' teaching facilities. They were joined by two administration witnesses, Surgeon General Burney of Public Health Service and Dr. Aims McGuinness, special assistant to Secretary Folsom. Their conclusion: legislation would be in the national interest and of great benefit.

Before the subcommittee, headed by



Rep. John Bell Williams (D., Miss.) are four bills: **H. R. 6874** by Chairman Harris of the full committee and **H. R. 6875** by ranking minority member Charles Wolverton, identical bills sponsored by the administration; **H. R. 7841** by Rep. John Fogarty (D., R. I.), which is indorsed by the AFL-CIO, and **H. R. 11913** by Rep. Kenneth Roberts (D., Ala.).

As the panel-type hearing progressed, a key point appeared to be the provision (Roberts and Fogarty bills) for allowing schools as much as two-thirds in federal funds if they increase freshmen enrollment by 5 per cent. The American Medical Association is opposed to this provision. Other highlights:

**Dr. Hugh H. Hussey**, dean-designate of Georgetown Medical School and AMA trustee—Medical schools have outgrown their facilities and the solution is one-time brick-and-mortar matching grants. **Dr. Ward Darley**, executive director, American Association of Medical Colleges—Each of the medical schools should be viewed as a national resource drawn upon by all the states, the armed forces and all parts of the economy. **Dr. Wallace Sterling**, president, Stanford University—Total money needed by the schools for new facilities is beyond the reach of private philanthropy or local taxation. **Dr. Vernon Lippard**, dean, Yale Medical School—By 1975 the U. S. will require another 2,000 graduates a year compared with the present 7,000. Without prompt action, there will be a reduction in physicians' services, and a crash program later.

### Union Welfare Funds

Senator McClellan (D., Ark.) proposes to require the registration of labor unions and labor relations counsellors and the observance of minimum standards in bylaws of unions. Name and title of each person responsible for administration of any trust in which a union is interested, including health and welfare funds, would have to be supplied the Secretary of Labor, along with other pertinent information. The bill is **S. 3618**.

### Hill-Burton

Senator Langer (R., N. D.) would amend the Hill-Burton hospital construc-

tion program to extend eligibility to non-profit corporations or associations that have a contractual affiliation with a non-profit hospital. The number is **S. 3699**.

### Veterans Benefits

In **H. R. 12001**, Rep. Siler (R., Ky.) would authorize emergency outpatient treatment by Veterans Administration for any veteran, whether the condition is service-connected or not, if the veteran is receiving a pension or compensation. Also, VA would be authorized to reimburse any such veteran for emergency outpatient expenses incurred at a non-VA hospital.

### Public Health Schools Grant Bill Passes House, Goes to Senate

The House on May 5 amended, then approved for Senate consideration the bill (**H. R. 11414**) for a two-year program of \$1 million annually for 11 schools of public health. Grants would provide them comprehensive professional training, specialized consultative services, and technical assistance in the area of public health. An amendment made clear that the number of federally sponsored students attending a school of public health would determine the size of the grant.

### Administration to Build 'Limited Number' of Shelters

The Eisenhower administration, announcing a new policy on shelters for protection against nuclear fall-out, informed the Holifield subcommittee of the Committee on Government Operations that it will construct a "limited number" of prototype shelters, which will also have practical uses.

### AMA Indorses Hill-Burton

#### Continuation, Urges Loan Guarantees

American Medical Association this week supported legislation for a continuation of the Hill-Burton hospital construction program and at the same time recommended federal guarantee of hospital and nursing home loans under an arrangement similar to that used by Federal Housing Administration. The Association's testimony was presented by Drs.

Julian Price, a Trustee, and Willard Wright, chairman of the AMA committee on medical and related facilities, at a hearing before the Health Subcommittee of the House Interstate Committee.

Dr. Price first explained that the AMA was supporting the extension, and making some suggestions for changes in the program, as the result of a survey conducted by the Association in 14 states and in which more than 200 people involved in hospital problems were interviewed. Dr. Wright said the program should be continued "for as long as needed."

Dr. Wright testified that AMA favored the following changes:

1. Eliminate both diagnostic-treatment and public health centers from benefits. He said there is little evidence of "a need or demand" for the "ill-defined" diagnostic-treatment centers. The AMA 14-state survey showed, he explained, that almost 90 per cent of all public health center projects under HB were located in these few states, and that these states were receiving about 75 per cent of all U. S. funds allocated to health centers.

2. Eliminate the mandatory priority given rural communities; the AMA survey showed great progress already has been made in meeting hospital needs of farm and small town areas.

3. Shift emphasis toward facilities for the chronically ill and nursing homes, and toward the modernization and renovation of old hospitals. To make this effective, states should have greater latitude in establishing priorities and allocating funds.

4. Eliminate all categorical grants and substitute one single appropriation for all eligible facilities, thus making it easier for states to make the best use of total money.

On the question of loan guarantees to hospitals and nursing homes, Dr. Wright said: "It is the position of the AMA that a government-insured loan program of the FHA type for hospitals and nursing homes, both nonprofit and proprietary, should be approved."

#### **Medical School Needs Set At \$275 Million**

The American Association of Medical Colleges has informed the health subcom-

mittee of the House Interstate Committee that the country's 85 medical schools will require \$275 million for rehabilitation and new construction in the next few years; about \$25 million is needed for rehabilitation. Dr. Lowell T. Coggeshall, president of AAMC, said the total does not include needed research and hospital construction. A recent AAMC survey shows that if medical school construction needs could be satisfied, they would be able to increase their current output of physicians from about 7,000 yearly to 8,000.

#### **Survey of Medical Supplies Begun**

At the request of the Office of Defense Mobilization, the Public Health Service is making a survey of 700 wholesale drug houses, surgical supply firms, and chain drug store warehouses to determine the current supply of medical items essential for survival after nuclear attack. PHS also is conducting a survey on a sample basis to establish the resources of retail drug stores. With cooperation of American Hospital Association, PHS has completed a survey of essential medical items in hospitals. ODM is seeking to determine the availability of essential medical items to the domestic economy in the event of national emergency.

#### **AMA Urges Top Medical Post Be Retained in Defense Department**

"In the best interests of the Armed Forces, the military medical services and the country," the post of Assistant Secretary of Defense for Health and Medical Affairs should be retained, the AMA has told Congress. The Association made its arguments in a letter from General Manager Blasingame to Chairman Vinson of the House Armed Services Committee, which is considering reorganization plans for the department that could result in down-grading the post of special assistant to the secretary.

#### **Polio Vaccine Makers Charged With Antitrust Violation**

The U. S. government has indicted five manufacturers of Salk polio vaccine on charges of violating the Sherman anti-



trust act, and is considering bringing civil damage actions against the firms. The indictments were returned this week by a Federal Grand jury at Trenton, N. J. Last summer a House Government Operations subcommittee investigated the vaccine sales, and the Federal Trade Commission has an investigation under way into trade practices of some antibiotic producers.

Named in the indictments are Eli Lilly and Co., Indianapolis; Allied Laboratories, Inc., Kansas City, Mo.; American Home Products Corp., New York City; Merck & Co., Inc., Rahway, N. J.; and Parke, Davis & Co., Detroit. The indictment claims that the companies, sole producers of the vaccine in the United States during the period covered, conspired to fix prices and eliminate competition on sales to federal, state and local government bodies.

## 'Free Choice of Physician' is Issue in Longshoremen's Hearing

The question of free choice of physician is a major issue before a subcommittee of the House Education and Labor Committee at hearings on proposals to change the longshoremen's and harbor workers' compensation act. Under the present law, the injured workman is treated by employer-selected physicians, except in (a) an emergency, (b) where the employer refuses to provide medical care or delays in furnishing it, or (c) where the employer grants freedom of choice of physician.

One of the proposed amendments in the bill under consideration (H. R. 7303) would give the injured employee the right to select his own physician, unhampered by any restrictions of the law.

## Nursing Homes Ask for Medical Guarantee on Mortgages

Owners and operators of nursing homes want the federal government to guarantee their mortgages so they can obtain needed new buildings and equipment when local lending sources either will not or cannot make the loans on reasonable terms without U. S. backing. Their arguments for U. S. assistance were presented to the Senate Banking and Currency's subcommittee on housing by George T. Mustin, past president of the American Nursing Home

Association. It represents about 5,000 institutions, almost all of them proprietary. Mr. Mustin made these points:

1. Because nursing home structures generally are regarded as one-purpose buildings, the usual local lending institutions in most instances will not or cannot grant credit on reasonable terms.

2. The association prefers loans of up to only 75 per cent of the value of the building to discourage "inexperienced and irresponsible persons" from entering the profession. This is the lowest ratio provided in any program under jurisdiction of the Federal Housing Administration, which would administer these loans.

3. The proprietary nursing home provides a vital service to the community and is part of the economy on which America's growth and prosperity is based.

4. More than 91 per cent of nursing homes and 71 per cent of beds for the aged and chronically ill are in privately-owned nursing homes, and "there is no expectation whatever" that public or non-profit institutions are prepared to take over this responsibility.

5. The proprietary nursing homes with realistic standards, and with proper arrangements for nursing and physicians' services, take care of "hundreds of thousands of elderly patients who otherwise would be forced to enter general hospital and pay the relatively high prices that hospitals are forced to charge."

## Senate Asked to Approve Funds For Staphylococcus Research

The American Hospital Association committee on infections within hospitals wants a first-year appropriation of \$1.5 million for research on staphylococcus infections. AHA suggests a \$1 million grant for the National Institute of Allergy and Infectious Diseases plus \$500,000 to the Communicable Disease Center at Atlanta for field studies, control activities and aid to state laboratories. The request was made of the Senate Appropriations subcommittee, which is winding up hearings on the fiscal 1959 budget for the Department of Health, Education, and Welfare. The bill has passed the House.

## Major Health Organizations Announce Program for Aged

**Chicago**—Better health care for the nation's 14 to 15 million aged is the goal of a comprehensive program announced today by the Joint Council to Improve the Health Care of the Aged.

The council's attack on the more knotty problems of health care for the aged is designed to: (1) increase opportunities for older people to obtain voluntary health insurance coverage, (2) expand health care facilities tailored to the needs of the aged regardless of economic status, and (3) develop more community health services for the aged.

The program will be implemented through the active and aggressive leadership of the council's four sponsoring organizations—the American Dental Association, American Hospital Association, American Medical Association, and the American Nursing Home Association.

## Legion Assails Budget Bureau For Reducing Number of VA Beds

Testifying before a Senate appropriations subcommittee, a spokesman for the American Legion has attacked the Bureau of the Budget for "going far beyond the intentions of those who established it" in requiring Veterans Administration to close some of its beds. John J. Corcoran, director of the Legion's National Rehabilitation Commission, said the bureau "has contravened the will of Congress by its dilatory tactics in delaying or denying the allocation of funds to the Veterans Administration under authorized and approved appropriations."

## New Movie on Social Security Available

The Chamber of Commerce of the United States has just announced availability of a new 26-minute movie entitled "A Matter of Choice—What Everyone Should Know About Social Security."

## New Report on Indigent Care

A new report titled "Medical Care for the Indigent in 1957" has been prepared by the Committee on Indigent Care of the AMA's Council on Medical Service. This report deals with some of the specific

problems that states have encountered under current laws. Two previous reports in the series have dealt with the development of Public Assistance medical care and the changes made by 1956 and 1957 amendments to the program.

## Committee Studies AMA's Basic Programs

One of the first projects of the Committee to Study AMA Objectives and Basic Programs will be to send out a questionnaire inviting suggestions and criticisms of the Association. This questionnaire will be based on the following four points which were listed by the House of Delegates when the committee was organized last December: (1) redefining the central concept of AMA objectives and basic programs; (2) placing more emphasis on scientific activities; (3) taking the lead in creating more cohesion among national medical societies, and (4) studying socioeconomic problems.

The questionnaires will be sent to not only state and county medical societies, specialty groups and other national medical organizations but also to a probability sample of more than 3,000 physicians chosen systematically from the new AMA DIRECTORY. The latter sample will include both AMA members and non-members.

Members of the committee include: Drs. Lewis A. Alesen, chairman, Los Angeles; Thurman G. Givan, Brooklyn; Milford O. Rouse, Dallas; James Z. Appel, Lancaster, Pa.; Hugh H. Hussey, Washington, D. C., and Raymond M. McKeown, Coos Bay, Ore.

## Central Repository for Medical Credentials

The Secretary General of The World Medical Association announced that on July 1, 1958, the services of a Central Repository for Medical Credentials will become available to the doctors of the world. All judicious precautions will be exercised to protect the records of depositors.

During war and national uprisings, medical records are destroyed or lost. The plight of hundreds of doctors who fled from their homelands during World War II and the more recent Hungarian uprising stimulated The World Medical Asso-



ciation to undertake means assuring the doctor that he will always be able to prove himself medically trained and fully accredited to practice medicine. Today, many doctors are working as laborers or research assistances as a result of the loss or destruction of their original credentials and the lack of a protective service in which authenticated copies could be deposited. The life-time cost of the service on a one-payment basis to the newly graduated doctor is approximately \$60.00 (USA).

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## ANNOUNCEMENTS

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### Southern Postgraduate Seminar

The Southern Postgraduate Seminar (formerly Southern Pediatric Seminar) will be held at Saluda, North Carolina. The first week, July 7th through July 12th, Pediatrics, Internal Medicine; second week, July 14th through July 19th, Pediatrics; third week, July 21st through July 26th, Obstetrics and Gynecology.

### Tennessee Valley Medical Assembly

The Tennessee Valley Medical Assembly, sponsored by the Chattanooga and Hamilton County Medical Society will be held Monday, September 29, and Tuesday, September 30, 1958, at the Read House, Chattanooga, Tennessee. For reservations write to Chattanooga Convention & Visitors Bureau, 819 Broad Street, Chattanooga, Tenn.

### Arthritis and Rheumatism Award

The Arthritis and Rheumatism Foundation offers predoctoral, postdoctoral and senior investigatorship awards in the fundamental sciences related to arthritis for work beginning July 1, 1959. Deadline for applications is October 31, 1958.

These awards are intended as fellowships to advance the training of young men and women of promise for an investigative or teaching career. They are not in the nature of a grant-in-aid in support of a research project.

For further information and application forms, address the Medical Director, Arthritis and Rheumatism Foundation, 10 Columbus Circle, New York 19, N. Y.

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## Obituary

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Dr. Archibald Alexander Little, III, Texarkana, died unexpectedly Wednesday, April 30, while making rounds of visitation at a local hospital. He had not been ill. Dr. Little attended Baylor Preparatory School at Chattanooga, Tenn. and Hampton-Sydney University in Virginia and was graduated from the University of Virginia in 1924. He interned at Charlottesville, W. Va., and the Contagious Hospital in New York City. Dr. Little was a Captain in the U. S. Naval Reserve and also a medical officer of the Texarkana Marine Reserve. He had served as president and secretary of the Bowie-Miller Medical Society and was on the staff of both the Texarkana and St. Michael's hospitals. He was a member of the American Academy of Pediatrics and a member of the Texarkana Rotary Club. Besides his wife, Mrs. Marguerite Little of Texarkana, he is survived by one sister, Mrs. Baker Farrar and three nephews.

Dr. Hogan Allen (Jack) Dew, Jr., aged 40, Warren physician and a native of Hamburg, died at his home in Warren Wednesday, May 7. Dr. Dew was an honor graduate of the Hamburg High School in 1933. He attended Arkansas A & M College, Monticello, and graduated from the University of Arkansas Medical School in 1939. Dr. Dew served his internship at Charity Hospital, Shreveport, La., where he then became resident surgeon at the Huey P. Long Hospital, Alexandria, La. He served in the Medical Corps of the U. S. Army during World War II being discharged as a Major. Dr. Dew practiced in Marlow, Okla., for a year after the war and then established practice in Warren in 1947. He was a member of the Warren Presbyterian Church. He is survived by his wife, Mrs. Freddie Dew; two sons, Thomas Allen and Robert Free

Dew; two daughters, Jean and Virginia Dew; his parents, Mr. and Mrs. H. A. Dew, Sr., Hamburg and a sister, Mrs. George M. Rorex of Monroe, La.

Dr. Frederick James Gray, Jr., aged 38, a Little Rock chest surgeon, died unexpectedly Wednesday, May 7, at Hot Springs. He had been at Hot Springs for the annual meeting of the Arkansas Medical Society. Dr. Gray graduated from Vanderbilt University and from the Vanderbilt School of Medicine in 1943. He interned at Barnes Hospital at St. Louis and took residency training at Barnes and at hospitals at Columbia, Mo., Nashville, Tenn., and Oteen, N. C., specializing in thoracic surgery. He entered private practice at Little Rock in July 1951 and became a consultant in surgery at the State Tuberculosis Sanatorium at Booneville in 1954. He was prominent in Tuberculosis Association circles, having served as president of the Arkansas Chapter of the American Trudeau Society. He was a diplomat of the American Board of Thoracic Surgery. Dr. Gray was a member of the American College of Surgeons and of the Southern Thoracic Surgeons Association. He also was a member of the American, Southern, Arkansas and Pulaski County Medical Associations or Societies, The American College of Surgeons, the Little Rock Rotary Club and the Westover Hills Presbyterian Church, where he was an elder and taught a Sunday School class. Dr. Gray was a member of the staff of St. Vincent's Infirmary, Arkansas Baptist Hospital and the Arkansas Children's Hospital. He was an assistant clinical professor of surgery at the University of Arkansas School of Medicine. He also was active in Boy Scout work. Survivors include his wife, Mrs. Lavona Craggs Gray; a son, Fred; two daughters, Lavona Anne and Barry Rogers; his parents, Mr. and Mrs. Fred J. Gray, Sr., of Sheffield, Ala.; and a sister, Mrs. Juliette Haertig of Seattle, Wash.

Dr. Corydon McAlmont Wassell, aged 74, died Monday, May 12, at his Little Rock home, far from Java where he earned fame early in World War II for removing wounded sailors while the Japanese ap-

proached. Dr. Wassell was the last Navy officer to leave Java in 1942 and for remaining to remove helpless and wounded men he was commended by the late President Franklin D. Roosevelt and was decorated with the Navy Cross. His fame spread when novelist James Hilton wrote a book about him which was made into a movie, "The Story of Dr. Wassell." Dr. Wassell was a retired rear admiral. He returned to Little Rock in September, 1956, to spend his last days near his family. Dr. Wassell was a lifetime member of the American Medical Association and the Lions Club. Survivors include his wife, Mrs. Madeline Day Wassell; two sons, Lt. James W. Wassell of the United States Naval Academy at Annapolis, Md., and Dr. John R. Wassell of Little Rock; a daughter, Mrs. Leland W. Seeton of Durham, Ct.; a sister, Mrs. C. S. Woodward of Little Rock, and seven grandchildren.

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## PERSONALS AND NEWS ITEMS

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**Dr. James B. Holder** has been elected president of the Monticello School Board for the 1958-59 school year. Dr. Holder has been a member of the board for the past seven years.

Guest speaker for the annual dinner meeting of the Northeast Arkansas Tuberculosis Association was **Dr. Harley C. Darnall**, medical director of the Arkansas Tuberculosis Sanatorium. The meeting was held in Jonesboro, April 21.

**Dr. H. Fay H. Jones**, Little Rock, attended the annual meeting of the American Urological Society in New Orleans April 28 to May 1. He was accompanied to the meeting by Mrs. Jones.

**Dr. F. Walter Carruthers**, Little Rock, addressed sessions of the Kansas State Medical Society and the Kansas Orthopedic Society in May. He spoke to the society on the subject of "Fracture Problems of Interest to the General Practitioner" and addressed the orthopedic group on the topic "Surgery of the Knee Joint."

The De Queen Clinic has announced the addition of **Dr. James J. Greenhaw** to its



staff. Dr. Greenhaw received his medical degree from the University of Arkansas School of Medicine in 1955.

Dr. Joe H. Sanderlin, Little Rock, has been presented a 20-year service emblem by the First Pyramid Life Insurance Co., of America in commemoration of his 20 years service as medical director of the company. Dr. Sanderlin also was presented with an inscribed desk set.

Drs. Paul Henley, El Dorado, R. B. Robins, Camden, and Kenneth R. Duzan, El Dorado, presented a program on "Uses and Abuses of Tissue Committees" at the meeting of the Section on General Practice of the American Medical Association in the Civic Auditorium, San Francisco.

## *Proceedings of Societies*

Contributors to the American Medical Education Foundation from the State of Arkansas during the month of April 1958:

W. R. Brooksher, Fort Smith	-----\$100.00
R. H. Chappell, Texarkana	----- 100.00
J. H. McCurry, Cash	----- 25.00
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	\$225.00

### STATEMENT OF THE AMERICAN MEDICAL ASSOCIATION

Before the Subcommittee on Housing of the Committee on Banking and Currency, United States Senate on FHA—insured loans for certain facilities

By R. B. Robins, M. D., May 21, 1958

Mr. Chairman and  
Members of the Subcommittee:

I am Dr. R. B. Robins, a practicing physician of Camden, Arkansas. I am testifying today at the request of the chairman of the board of trustees of the American Medical Association, and I am pleased to give you the views of the American doctors on some of the problems of caring for our aged citizens. I am a past vice-president of the AMA and past president of the American Academy of General Practice.

My testimony today will be concerned with the medical problems that are peculiar to the aged, the facilities available to care for their ordinary housing needs as well as their medical needs, the cost of these services, and the role of the proprietary nursing home in helping to solve some of these problems.

It is our understanding that the Federal Housing Administration presently is offering mortgage insurance for construction of large institutional-type homes for the aged which may have a section for those needing nursing care. But to qualify for this help the owners and operators must be nonprofit organizations.

My remarks today will be directed solely toward pointing out the need for a similar program of loan guarantees for which proprietary as well as nonprofit organizations would be eligible.

As the basis for my testimony, I want to state that the American Medical Association, through its Board of Trustees, has approved and will support a government-insured loan program of the FHA type for non-governmental hospitals and nursing homes whether their ownership is of a non-profit or a proprietary character.

In recent years, the problems of the elderly have attracted an ever-increasing amount of national attention, both within the government and among groups and associations outside government. And there is every reason the country should apply its talents and energy to help make the lives of these people more pleasant and rewarding, and to help them find ways of satisfying their needs, including housing and medical care, in the most efficient, effective and economical way possible.

The proportion of population past 65 is increasing at a rate that might be described as amazing. In 1900 there were only 3,000,000 of these elderly citizens. Now there are approximately 15,000,000. Already they represent nearly nine per cent of our entire population, and the trend has not yet leveled off.

Not one factor alone explains how mankind has been extending his own life, but many factors—advances in medical science, a new awareness of the principles

of nutrition, better working conditions that allow more men and women to reach retirement age, better housing. All of these factors have contributed their part to the evolution in the age of our population.

New problems naturally attend such gains in longevity, and many of these problems must be faced by persons skilled in furnishing medical care and nursing services.

From its beginning more than a century ago the American Medical Association has been deeply involved in medical aspects of caring for the aged. At work now in this field are three active committees attached to the Association's Council on Medical Service. They are the Committee on Aging, the Committee on Indigent Care and the Committee on Medical and Related Facilities.

Our work in these fields also has been in cooperation with other interested agencies.

In 1946, representatives of the AMA met with representatives of the American Hospital Association, American Public Health Association, and the American Public Welfare Association, to establish the Interim Committee on Chronic Illness which, in May, 1949, was changed to The Commission on Chronic Illness, with representatives of the general public, industry, labor, agriculture, education, religion, social sciences, journalism, health, and welfare.

A number of studies were made. One of these I will leave with you, "Nursing Homes, Their Patients, and Their Care," published by the U. S. Public Health Service which cooperated in this study.

The Commission was disbanded as such in June, 1956. The cooperating organizations are working on the parts of the program in which they are best qualified. The Council on Medical Service of the American Medical Association still prints the Newsletter on Chronic Illness. A copy of this is attached.

This interest of the AMA continues right down the line to the family physician who is on the scene when the various medical crises occur in the lives of older people. A majority of our constituent

state medical societies have formed committees on aging and are making their contributions. In addition, as a recent development, a series of regional meetings, sponsored by the AMA, has been held to stimulate local action in bringing the best possible medical care to senior citizens in their homes, in physicians' offices, in nursing homes and in hospitals.

This has not been all talk. I want to mention several concrete achievements that are the result of cooperative undertakings of the medical profession, the hospital and nursing home people, the drug industry.

First, new treatment and surgical procedures have been developed to ease the discomforts of the ill and disabled aged, and in many cases to rehabilitate them to the point where they can take care of themselves and often return to light employment. Some examples of this are cortizone, antibiotics, tranquilizers, early ambulation of operative cases, physical and occupational therapy, early evaluation of seriously ill and injured for vocational and guidance training.

Second, enrollment of older people under voluntary health insurance has increased at an encouraging rate in recent years. It has gone up about 100 per cent in the last seven years alone. Presently, exclusive of the approximately 3,000,000 older persons who receive public assistance, more than 50 per cent of those over 65 have some form of health insurance.

Third, the American Medical Association has joined with the American Hospital Association, the American Dental Association and the American Nursing Home Association in the formation of the Joint Council to Improve the Health Care of the Aged. The council's long-range goal is better health for all the aged. Of more immediate concern is working out answers to meet the financial and social problems that accompany chronic illness.

Fourth, hospitals are actively experimenting with gradations of care, a new concept that attempts to fit the patient to the type of care he needs, but not for complete hospital care when that is not required.

Fifth, for the last year, representatives of the American Medical Association and



## FEATURES

the American Nursing Home Association have been meeting regularly to prepare improved medical care standards for the nursing homes, standards that admittedly are badly needed in some sections of the country.

Sixth, a task force which will go to various sections of the country this summer visiting nursing homes and medical groups working in this field. This will not conflict with state regulations which are directed mainly toward fire, building standards, and sanitation.

I would like now to describe more specifically some of the medical and medio-economic problems that are peculiar to the aged.

Surveys substantiate the fact, readily appreciated, that the aged as a group need more medical care than those in the mid-years of life.

Most of the aged ill or disabled can, and are, best cared for in the physician's office or in their homes, still others require care in a medical facility. The question is, do these people need care in a general hospital at a cost of \$20 to \$25 per day? Some of them do, but others could receive the maximum professional attention their condition calls for in a less expensive facility—a properly constructed and operated nursing home, with professional medical and nursing care at hand or readily available. I am speaking now of older people with conditions that are chronic and to some extent serious, such as . . . hypertension, diabetes, arthritis, paralysis of extremities.

There is a much larger group who require some nursing and medical care, and who could be provided for quite satisfactorily in private homes. Yet, for many reasons, the relatives—if there are relatives—are not in a position to take in these older people. They need housing, and some medical care, but not hospital care in many cases. Yet, many thousands of them are in hospitals, at heavy cost to someone—relatives, themselves or the taxpayer—merely because there are not suitable nursing homes or other chronic disease facilities.

This situation points up the critical need for new and improved facilities tail-

ored to housing and medical care to the specific requirements of the older citizens in housing and medical care. Nursing home administrators, have appeared before your committee earlier. They have convincing evidence, accumulated over recent years, that they can't provide the services they want to provide in quality or in quantity because they are unable to obtain the credit they need on reasonable terms.

The normal lending agencies just are not making loans to proprietary nursing homes in any significant volume. The lenders have their reasons—because the homes generally are one—purpose structures, unattractive as a straight commercial risk, even though foreclosures are rare.

As doctors we know the need for attractive, clean, safe nursing homes where we can be sure our older patients will receive the proper nursing care under our direction, and where the costs will not be prohibitive. We also know—because we have discussed the problem thoroughly with nursing home people—that the time has come when the federal government might well help out nursing home management, not for the good of management but for the good of the country.

Through Hill-Burton and other programs the federal government for years has been assisting public and nonprofit hospitals through money grants. The proprietary nursing homes are not asking for grants, but only a federal guarantee to make it possible for them to obtain the mortgages they need. They will pay the going rate of interest including the mortgage insurance premium and will repay the loans.

We strongly urge this committee to consider an insured type loan for which proprietary nursing homes could qualify, under FHA. This would stimulate the local lending agencies and bring about an atmosphere that would produce the capital needed for construction and equipment.

I do not know of a single group in the medical field that does not now urge the construction of special facilities for the chronically ill and for the aged. That is exactly what a well-equipped, well-admin-

istered nursing home is. All medical authorities with whom I have been in contact believe this to be one of the really critical medical shortages today.

Testifying before a House Interstate and Foreign Commerce subcommittee two weeks ago, Acting Secretary Elliott Richardson of the Department of Health, Education, and Welfare said the Department will shortly offer amendments to the Hill-Burton act directed toward our increasing requirements for long-term care facilities which can provide care at minimum cost for chronically ill and disabled persons.

We are certainly interested in such facilities, but we feel equally convinced that thought also should be given to improving proprietary nursing homes as well. Today approximately 71 per cent of all nursing home patients are cared for in proprietary facilities.

In February of this year the first national conference on nursing homes and homes for the aged was held here in Washington. I offer for the record a summary of that conference's report, containing information supporting our request for action in this field.

## PUBLIC Physician Personal Patient RELATIONS

Much is being said these days about public relations. Our profession is sometimes unfairly criticized. Sometimes it may be justly criticized. All the great volume of things said and printed about public relations of the medical profession, or any other profession for that matter, could be summed up in the brief statement of our Lord in His sermon on the Mount—which has come to be known as the Golden Rule—"Therefore all things whatsoever ye would that men should do to you, do ye even so unto them: for this is the law and the prophets." (Matt. 7:12)

(C. Lewis Hyatt, M.D.)

## Woman's Auxiliary

The Medical Auxiliary to the Bowie-Miller Medical Society had its regular meeting Tuesday May 13, in the Mirror Room of Hotel McCartney in Texarkana for the installation of officers. Installed by Mrs. Robert Chappell, they were Mrs. W. D. Thornton, president; Mrs. C. G. Smith, president-elect; Mrs. James Barnett, treasurer; Mrs. John Griffin, recording secretary and Mrs. Frank Cantrell, corresponding secretary.

Mrs. Louis McFarland was elected president of the Auxiliary to the Garland County Medical Society at the April meeting. Other officers elected were Mrs. James Leatherman, president-elect; Mrs. John W. Dodson, Jr., recording secretary; Mrs. R. V. Bennett, corresponding secretary and Mrs. W. A. Goodrum, treasurer. Guest speaker at the meeting was Dr. Charles Yohe who addressed the gathering on "The Frightening Forties—Mental Health for Middle Age."

The Pulaski County Medical Auxiliary met in April for a luncheon in the Dr. Charles Minor Taylor Memorial. Mrs. Walter Carruthers was hostess for the day. A program on Civil Defense was presented by Mrs. Thurston Black after the business meeting.

### ANSWER: "What Is Your Diagnosis?"

LAB DATA: Studies revealed no trypsin activity of stools or duodenal drainage. There was hypochronic anemia and mild leukocytosis.

X-RAY FEATURES: Chest Films 8/19/52 show patchy increase in density of mild degree in the medial basilar portions of both lower lobes, a non-specific change consistent with some infection. 4/29/53 findings were typical of chronic widespread broncho-pneumonic process in both lungs, with mottled and streaky density and associated interspersed areas of emphysema.

DIAGNOSIS: Lungs Fibrocystic Disease. From the University of Arkansas Medical Center, Department of Radiology.



## BOOK REVIEWS

**HORMONES IN BLOOD:** Edited by Wolstenholme, G.E.W., M.A., M.B., and Millar, Elaine C. P. Ciba Foundation's Colloquia on Endocrinology, Volume XI, Illustrated. Pp. 416, Little Brown & Co., Boston, \$9.00. 1957.

This volume is another of Ciba Foundation's record series of its extensive research activities. The contents are made up of records of the London meeting sponsored for the discussion of the subject in February 1955.

It includes much valuable work on Thyroid hormones and in discussion form, compares the findings of various world clinics. All of these volumes constitute a valuable source of reference material and especially in the field of bio-chemistry and are basic research reports.

In addition there are chapters on the various Steroids and on Insulin. Considerable of these discussions are on technique of isolation of these substances chemically and physically and in most instances the details are complete.

The value of these studies on Ageing and Endocrinology can scarcely be estimated at present, as the material being brought out is preclinical and the real results that are to come from these symposium, sponsored by Ciba, will be felt and appreciated in the years to come.

This text belongs in any library of biological or physiological chemistry and gives many valuable methods in hemodialysis.—F.R.

**THE NEUROSES AND THEIR TREATMENT.**

Edward Podolsky, M.D. The Philosophical Library, Inc. New York. \$10.00.

This book is a discussion of Neuroses by various authors and it is edited by Dr. Podolsky. The book seems well organized and its coverage is good. The style of writing is easy to read. This book is recommended as being of interest to the practicing physician.—A.K.

## TUBERCULOSIS ABSTRACTS

Sponsored by

The Arkansas Tuberculosis Association

### **The Chest Roentgenogram and Chest Roentgenographic Surveys Related to X-Ray Radiation Effects and Protection From Radiation Exposure**

*Executive Committee of the American Trudeau Society, American Review of Tuberculosis and Pulmonary Diseases, February, 1958.*

The chest X-ray continues to be an important part of all tuberculosis case-

finding programs and an important and dependable tool in early diagnosis of unsuspected chest disease.

In June of 1956 the National Academy of Sciences, National Research Council, called attention to the "Biological Effects of Atomic Radiation," especially as it affects the human body and its reproductive organs. Later reports discussed the possibilities of effects of body radiation upon the blood system, with leukemia as a delayed effect.

This discussion on radiation effects has led everyone — scientists, physicians, and laymen—to think deeply concerning them and to weigh the benefits from X-ray diagnostic procedures against the liability of harmful effects of radiation. Most of the factual information on this aspect of low doses of ionizing radiation has come from animal experimentation.

In people who are ill, the needs for radiological studies are great and the diagnostic benefits outweigh the possible hazardous effects of radiation. All radiation exposure that serves no useful purpose should be scrupulously avoided.

It is well recognized that no standard pattern of radiation exposure is delivered by any standard type of X-ray machine. Each X-ray unit must be provided with all necessary safety devices for minimizing gonadal and general body radiation. This must be done by persons trained in radiological protection.

### *Who Should Get X-rays?*

The American Trudeau Society has emphasized that chest roentgenograms are only justified if they lead to the detection of previously unsuspected or clinically significant, curable lung disease, followed with appropriate therapy. If abnormal chests are not followed up, radiation has been wasted.

Therefore, it is essential for those engaged in the detection of pulmonary disease to evaluate their yields. Among certain population segments in which there are high yields, periodic chest X-rays are the most practical approach. Among infants, children, young adults, prenatal patients, and especially young diabetics, the tuberculin test should be used as the preliminary screening technique whenever possible, and the tuberculin reactors

should have X-ray examinations of the lungs. However, aside from screening, every child should have a single X-ray film for the identification of congenital or developmental defects and nontuberculous disease, and for comparison with any films taken later in life. Only those X-ray units that meet modern requirements for radiation protection should be used.

### *What Type of Apparatus Should be Used?*

Other factors being equal, the amount of radiation necessary for a satisfactory chest film is least with a standard 14x17 film in a cassette with intensifying screens. In comparison, there is approximately 3 to 5 times more radiation using the mirror optics photofluoroscopic unit and about 10 to 20 times the radiation exposure when using the standard lens camera photofluorographic machine. This is still a very small amount of radiation, but these figures may be multiplied by 100 if the apparatus is not properly equipped with protective devices.

Where the number of survey films taken is small or when modern protective devices have not been installed, it is better to use standard 14-17 films, even at a higher cost. Where the number of films taken per day is large, or the machine must be moved frequently, a properly equipped photofluorographic unit is the most practical apparatus. The increased amount of radiation involved is small and is warranted where the yield of new cases is significant.

Whenever a new photofluorographic unit is purchased the newer mirror optical system camera is to be preferred over the ordinary lens system even at greater cost. Screening of groups by fluoroscopy should be discouraged because the results are not accurate enough for diagnostic purposes; there is no permanent film record of the examination; and the radiation exposure involved is excessive.

### *The Nature of Radiation Effects*

Populations are being exposed to a variety of radiations from natural and artificial backgrounds as well as from medical examinations. Exposure received by the population today from all sources appears to be at a lower level than that which has produced harmful effects in humans and experimental animals.

Those responsible for screening programs should ensure that the radiation dose is maintained at the lowest practicable level both to those being examined and to equipment operators.

*Conclusions.* The kernel of the problem of radiation effects is the awareness by the public, physicians, and tuberculosis workers that the whole subject is one of weighing the benefits of radiography against the known and the unknown effects of radiation exposure. It should remain clear that radiation that serves a useful and necessary purpose is warranted, but it should be used with the best protective devices. Putting the chest X-ray examination in its proper perspective, the radiation exposure to the gonads or body from a single chest film, using a well monitored machine, is infinitesimal when compared to the commonly used X-ray diagnostic procedures directly involving the gonadal areas.

*Recommendations.* Several specific recommendations from this report can be made to the constituent associations of the National Tuberculosis Association and American and State Trudeau Societies.

1. Chest X-ray surveys must be continued in the field of tuberculosis, in the detection of cancer, industrial thoracic disease, acute and chronic nontuberculosis infections, chest tumors, and cardiovascular abnormalities.

2. Conventional and photofluorographic X-ray units with adequate protective devices may be used to survey segments of the population which are expected to show a high yield of thoracic disease.

- a. The installment of certain protective devices should be made *now*. These include proper cones, proper filtering, shielding devices for subject and operator, and exposure controls of an automatic nature.

3. Tuberculin testing in infants, children, young adults, prenatals and young diabetics should be developed as a primary guide to tuberculosis contacts and as one case-finding method, limiting X-ray of the chest to those with a positive tuberculin test.

4. Case-finding programs should be reassessed to determine those segments of



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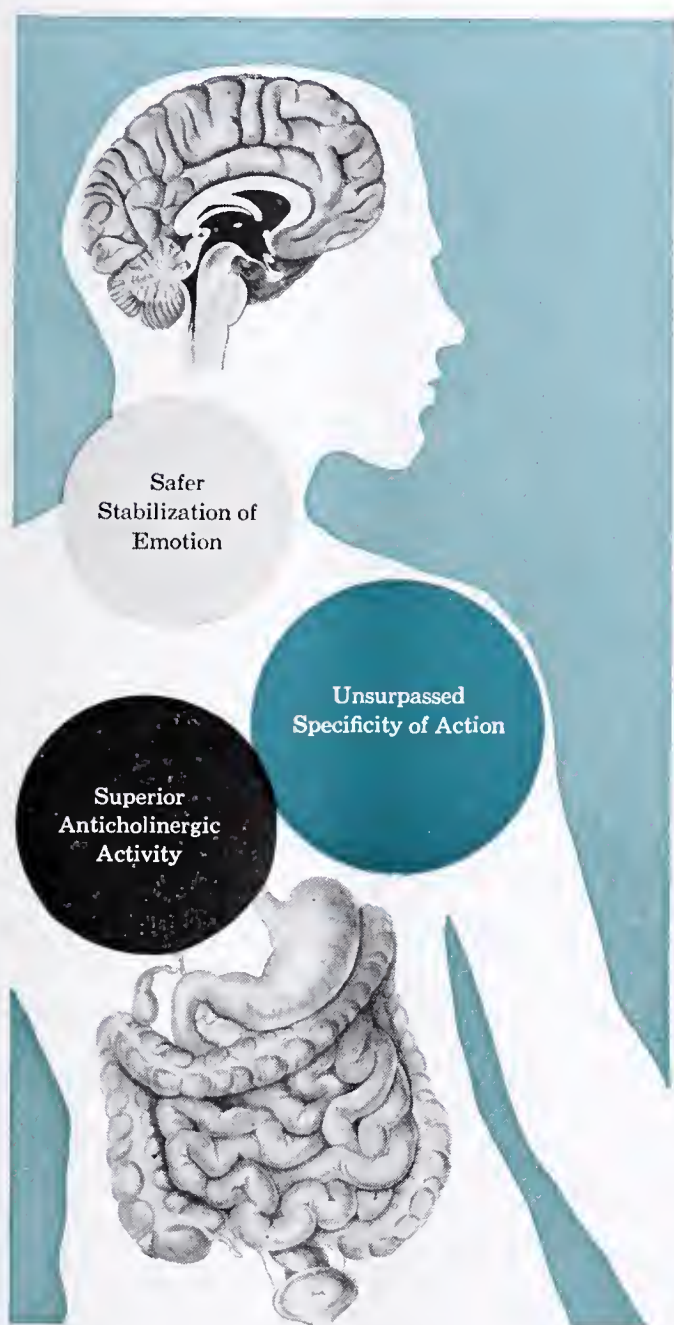
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## FEATURES

the population most deserving of chest X-ray surveys or tuberculin testing.

6. The instruction and training of personnel should include information concerning the protective devices for all types of X-ray units.

6. It should be made known to health workers and the public that effective steps have been taken to minimize radiation exposure involved in taking chest X-rays. The need for early diagnosis and treatment of all forms of pulmonary disease should be emphasized.

7. Members of the American Trudeau Society and constituent associations of the National Tuberculosis Association might well promote the training of personnel skilled in radiation protection. The leadership of these organizations in the field of thoracic disease would help to assure the public that radiation exposure was at

a minimum and that protection was maximum wherever chest X-ray examinations are conducted under their sponsorship.

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# The JOURNAL

## OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

AUGUST, 1958

Number 3

## Hypnosis in Medicine and Surgery

SEYMOUR HERSHMAN, M.D.\*

The history of Hypnosis dates back to the beginning of civilization. In ancient times it was described in the form of drum induction, dancing, chants, Yogism, and the "laying on of hands."

The modern history of Hypnosis began in 1773 with Mesmer who promulgated the idea of a "body magnetic force" present in some people which affected the subject. Mesmer practised his "cures" for many years in Austria and France and was ultimately discredited by an investigation of the French Academy of Medicine in 1784. The committee, of which Benjamin Franklin was a member, stated that the "cures" were a result of the imagination.

De Puysegur, a pupil of Mesmer, first described the somnambulistic state, and from 1820 to 1840 there was heightened interest in Britain, and in the United States from 1840 to 1850. Elliotson, a leading English physician, Dean of Edinburgh Medical School, who introduced the stethoscope in Great Britain, worked with hypnosis, or rather mesmerism, from 1845 to 1851. Braid, at the same period, advanced the theory of the trance resulting only from suggestion and first coined the terms "Hypnosis" and then attempted to change it to "mono-idealism." About the same period, James Esdaile, working in India, performed over 3000 major and minor surgical procedures under mesmeric anesthesia and reported some 300 cases in the 1840s. He was first discredited as an absurd charlatan and lost his license, but later was recognized and honored for his meritorious efforts by the naming of a large hospital in his memory in Perth.

From 1885 to 1900, interest in Hypnosis lagged due primarily to the advent of chemo-anesthetics which was more universally adaptable than Hypnosis, but at the turn of the century, Freud reawakened interest.

Freud's first work in association with Breuer was with Hypnosis and its use in hysterical states. A poor hypnotist, and uninterested in brief treatment, he turned from it, which again led to a decline of interest. Analysts still reject its use because Freud abandoned it, despite the fact that in one of his papers he stated that if psycho-therapy were ever to be made available to the masses, hypnosis would need to be employed.

World War I revived interest, and Hadfield first used Hypnosis analytically, describing many cures of "shell shock" and other neuroses. Clark Hull, working at Yale University, did a long series of scientifically controlled experiments with Hypnosis which he published in an excellent volume, *Hypnosis And Suggestibility*. World War II offered increasing possibilities of experimental and clinical work in this area, and now Hypnosis is enjoying a great revival in medical and dental practice. The first institution to offer classes on the graduate level was the University of California in Los Angeles in 1951, but now instruction is being offered at Tufts, Marquette, Texas, Yale, Long Island, and many others.

Many "cults" have adopted Hypnosis, usually denying that they have done so. Examples are Christian Science, Natural Childbirth, Progressive Relaxation, and Dianetics. Partly due to these activities and to cultural taboos, professional ac-

§Presented April 24, 1957, at the annual session of the Arkansas Medical Society.

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ceptance is only slowly filtering through, although with increasing acceleration, demonstrated by articles appearing more and more frequently in medical Journals as the Journal of the American Medical Association, Western Journal of Obstetrics and Gynecology, Journal of Nervous and Mental Diseases, etc. The British Medical Association Report is another example of increasing professional acceptance. In 1955, after an extensive eighteen month investigation, they recommended:

1. That a description of hypnotism and its therapeutic possibilities, limitations, and dangers should be given to medical undergraduates.

2. That instruction in the clinical use of hypnotism should be given to all medical graduates, especially anesthetists, obstetricians, and practitioners in the psychological and psychiatric medical specialties.

3. That there is a need for further research into hypnotism and that this should most aptly be carried out by university departments and research foundations.

What is Hypnosis? Hypnosis is an increased capacity to respond to an idea. No completely acceptable theory or definition of the trances state has yet been offered. It can be described, but not too well defined. The Hypnotic trance is a state of relaxation, of fixed attention, of mental reorientation, with dissociation of the conscious and sub-conscious minds, combined with a state of willingness to accept suggestions. Hypnosis signifies the capacity of a person to respond to an idea so that he can utilize the idea in his own experiential life.

That Hypnosis is a form of sleep is a theory propounded which has been definitely disproven by electro-encephalographic determinations which denote that the alpha waves of sleep are not present during hypnosis, unless sleep is strongly suggested.

That Hypnosis is a conditioned reflex was described by Pavlov, but the ability of the patient to respond to an idea for the first time in his experiential life was not taken into account.

The Psychoanalytic Theory that Hypnosis is a regression to infancy with identification of the operator as a parent, either mother or father, has still some adherents although it is rapidly losing favor.

The "As If" theory wherein it is stated that Hypnosis is behavior as the subject believes a hypnotized individual should behave has merit—but only for the early or light stages.

Finally it is believed that Hypnosis is a dissociation of the conscious and subconscious. The present trend is toward a combination of the "As If" theory early in the trance induction with ultimate dissociation in the deeper states.

Some important definitions of the phraseology utilized in Hypnosis may be helpful. Suggestion is the presentation of an idea to a subject in an attempt to evoke interest so that he can make motor, mental, and intellectual responses.

Subconscious response may be explained as one may have the name "on the tip of the tongue," the subconscious has the name "on the tip of the organ," resulting in an "organ response." The patient should learn to use and substitute mental concepts for concrete objects, and one should always rely on the subject's ability to utilize these qualities.

Interpersonal Relationship is the important factor in Hypnosis. There must be trust, confidence, and cooperation. Frequently, resistance on the part of the patient in going into a trance may be an unconscious utilization by him of a face saving mechanism wherein he needs to test the doctor's trust.

It is important to differentiate between Trance Induction and Trance Utilization. The induction is the preparation for the utilization of the Hypnotic Trance State and can be compared to the induction of an anesthetic in preparation for surgery.

Patient Orientation is an important factor to be borne in mind by the doctor. All thinking should be directed to the patient as an individual personality. "What does the patient need or want?," not "What do I want him to do!." It is the lack of this orientation which defeats the purpose of the untrained.

There are no dangers to the subject that derive from Hypnosis. There are only the



dangers that are concerned with the relationship of one person to another. In regard to anti-social behavior, most experimental reports in the literature are of students in a laboratory, or similar circumstance, wherein the patient *knows* that the situation is experimental and *knows* that the instructor will not allow anything untoward to occur. The subject is willing to have the instructor accept all responsibility and knows this is the case. This relationship has nothing to do with Hypnosis. In regard to the danger of anti-self behavior, the life long patterns of personality cannot be altered in a short time, and consequently alleged reports of self injury are not factual.

There is usually no difficulty involved in wakening from the trance state. Rarely will a patient require special handling and this may be readily accomplished.

The most common misconceptions of Hypnosis are: that the subject is unconscious; that hypnosis implies a surrender of the will wherein the subject is controlled by the hypnotist; that hypnosis requires a weak mind and that a strong mind cannot be hypnotized; that hypnotizability and gullibility are synonymous; that the subject may talk and tell secrets as with drugs; and that the subject may not waken. None of these is true.

Discussing the subject of Induction Methods is in itself a complete chapter. Briefly, among the direct induction procedures are: eyes open and fixated, accompanied by suggestions of progressive relaxation, or accompanied by ideo-motor activity, or facilitated by the coin technique or hand levitation; eyes closed, accompanied by arm levitation or visual imagery; and the obtaining of hypnoidal or light stages of Hypnosis through testing procedures, then deepening the Hypnosis.

Among the methods of indirect induction are: waking from normal sleep, the confusion technique, and others.

Hypnosis may be utilized in most of the medical specialties. In Obstetrics and Gynecology it is used to relieve pain as an adjunct to chemo-anesthesia or as pure Hypno-anesthesia. It has also been used to alleviate fears, anxieties, etc., with reference to impending surgery; to control secretion of milk in parturient patients;

for menstrual dysfunctions; to alleviate menopausal symptoms; and in treating habitual abortions where no organic pathology is present.

In Surgery, Hypnosis has been applied for pre and post operative control of pain, apprehension, etc.; to control the cough reflex post operatively with reduction in possibilities of atelectasis; to increase the rate of healing through comfort; and to control capillary bleeding.

In the field of Dermatology, Neurodermatitis, Eczema, Pruritus (where organic pathology has been ruled out), Warts, Dermatitis artefacta, etc., have been treated with Hypnosis.

Nail biting, enuresis, behavioral problems, and allergies in the Pediatrician's practice have been treated with hypnotic suggestion.

In Medicine it has been used as a therapeutic tool for the treatment of symptoms such as functional hypertension; "stress" diseases as angina, asthma, ulcers, etc., migraine and other "nervous" headaches; obesity; excessive smoking; other abnormal or distressing habits as tics and twitches; insomnia; constipation; and a host of other conditions.

In the fields of Psychology and Psychiatry, Hypnosis has been applied for anxiety states, amnesias, compulsions, delusions, and depressions, functional speech disorders, sexual disorders, and other neuroses and psychoses.

The question is frequently posed as to where one may obtain instruction in Hypnosis. Presently there are only comparatively few places where adequate instruction in Medical Hypnosis may be obtained. Physicians should be warned against stage hypnotists, self styled psychologist lacking adequate credentials (as membership in the American Psychological Association), and other cultists. These people, while frequently capable of producing the induction of a trance are all for obvious reasons Hypnotist-oriented rather than patient-oriented. The trance state induced in this manner is worthless for most medical therapeutic purposes and may even increase the symptoms and the difficulty of securing beneficial results.

U. C. L. A. presents an annual Seminar for physicians and dentists under the

directorship of Roy Dorcus, Ph.D., which is probably better for the advanced student than the beginner. Marquette and Tufts have had annual Seminars that are excellent for the beginner. Long Island University presents an extensive 26-week course which is extremely valuable, especially to dentists. An organization called Seminars on Hypnosis, conducts intensive three day courses in various parts of the country under the sponsorship of local medical or dental groups. Methods of Induction are demonstrated and practice sessions for the Seminarian are held under supervision of the Staff. The Ohio Academy of General Practice, Roosevelt University, University of Kentucky, Birmingham Obstetrical and Gynecological Society sponsor such Seminars. On May 31, the Arkansas Society of Clinical Hyp-

nosis will sponsor a Seminar on Hypnosis to be held in Little Rock.

## SUMMARY

1. Medical Hypnosis is not new. It is as old as mankind.
2. Hypnosis is a normal state.
3. There are no dangers to Hypnosis as such.
4. No special capabilities are required to induce Hypnosis.
5. Hypnosis is not a treatment, nor is surgical anesthesia; it is an adjunct to therapy, an additional therapeutic tool.
6. More physicians should acquaint themselves with this valuable addition to the medical armamentarium.
7. Care should be exercised in avoiding training by a stage hypnotist.





# Cervical Cancer in a Small County Medical Society Tumor Clinic

WILLIAM B. HARRELL, M.D.\*

ELEANOR J. MACDONALD, A.B.,  
EPIDEMIOLOGIST\*\*

Since the Bowie-Miller Counties Medical Society Tumor Clinic was established in 1947, we have had the same two to five gynecologists and the same two to five radiologists treating cervical cancer in rotation on the tumor clinic staff.

When the clinic was organized it was decided that all cervical cases would be seen by a gynecologist and radiologist in conference, and it was further agreed that most of the lesions, with the exception of the pre-invasive lesion or carcinoma in situ, would be treated by irradiation because of our existing facilities. This decision was not intended to mean that we did not appreciate the fact that radical surgery in skilled hands would also give good results in certain selected lesions; it simply meant that our facilities and personnel would not justify radical cancer surgery done routinely.

The radiation therapy then was planned and administered jointly by a gynecologist and radiologist after carefully staging the carcinoma of the cervix using the League of Nations Classification.

From the physical standpoint of effective therapy, we attempted to cover the entire pelvis with a minimum tumor dose of 5,000 r. (combined X-ray and radium) during the six-week period of therapy. While it is understood that accurate estimation of r. for a combination of X-ray and radium is difficult, an attempt was made to obtain this level of therapy for the entire pelvis. (1)

Fractionated intracavitary radium and supplemental medium voltage external roentgen therapy were used in all uncom-

plicated cases. The radium distribution was always dependent on local anatomical factors and recently we have used the Ernst device in a majority of the cases.

A post treatment Papanicolaou Smear and/or biopsy is done routinely on all cases. Those cases which show persistent disease are then re-evaluated. In some of these selected cases Wertheim procedures have been done.

An analysis of our results for the ten year period (1947-1957) is given in the following six tables:

TABLE I

Table I gives the total number of cases seen at the Bowie-Miller Counties Medical Society Tumor Clinic, 1947-1957. There was a total of 1,234 of which 352 or 28.5 percent were residents of Bowie County and 200 or 16.2 percent were residents of Miller County. Of these 1,234 individuals, 458 or 37.1 percent were from Texas (Bowie County plus other Texas counties). Seven hundred and sixty or 61.6 percent were from Arkansas (Miller County plus other Arkansas counties). The other 16 or 1.3 percent patients were from other states or their residence was unknown. In Texas, the patients have come from as far as over 500 miles. In Arkansas, patients have come from as far as 300 miles. Three patients have been residents of other states. The majority of patients outside Bowie-Miller Counties have lived within a radius of 100 miles. A real service to a wide and growing area is provided by this clinic.

Residence of Total Series by County

TABLE I

County	Number
TEXAS:	
Bowie.....	352
Cass.....	46
Red River.....	16
Morris.....	12
Others (18 Counties).....	32

\*Bowie-Miller Counties Medical Society Tumor Clinic St. Michael's Hospital, Texarkana, Arkansas.  
\*\*M.D. Anderson Hospital and Tumor Institute, Houston, Texas.  
\*\*\*Presented May 6, 1958 at the Annual Session of the Arkansas Medical Society, Hot Springs, Arkansas.

ARKANSAS:

Miller.....	200
Polk.....	105
Little River.....	104
Sevier.....	67
Hempstead.....	66
Nevada.....	40
Howard.....	37
Garland.....	34
Columbia.....	28
Lafayette.....	25
Clark.....	23
Others (12 Counties).....	31

OTHERS:

Kentucky.....	1
Louisiana.....	1
Oklahoma.....	3
Unknown.....	11
<b>TOTAL.....</b>	<b>1,234</b>

TABLE II

Cancer of the cervix cases constituted 23.5 percent of the total cancer cases. In the females in this series, cancer of the cervix accounts for 38.0 percent of cancer. There were 142 with cancer of the cervix among the 374 female patients attending the clinic. Of these 142 cases, 27 or 19.0 percent resided in Bowie County and 26 or 18.3 percent resided in Miller County. A total of 33 or roughly a quarter of the patients came from Texas and three quarters or 108 came from Arkansas.

Residence by County—Cancer of the Cervix

TABLE II

County	Number
TEXAS:	
Bowie.....	27
Others.....	6
ARKANSAS:	
Miller.....	26
Little River.....	19
Hempstead.....	15
Polk.....	12
Others.....	37
<b>TOTAL.....</b>	<b>142</b>

TABLE III

Table III shows the total cervix cases by year of admission and status of follow-up. Nineteen cases or 13.4 percent are lost to follow-up, all but one of which occur in the early years of operation. Of the 142 cases seen, 102 could have survived five years or more because they were seen and treated prior to the last five years, in the period from 1947 through 1952. Of this 102, there are 84 traced cases and 18 untraced. Of the 84 traced who could have survived, 26 or 25.5 percent survived for five years or more.

Four of these cases had second primary cancers: one of the breast, one of the bladder, one of the esophagus and one had malignant lymphoma. This is a high proportion of multiple lesions, but the total series is not large enough to allow the attachment of undue significance to this finding.

Cancer of the Cervix by Status of Follow-Up and Year of Admission

TABLE III

Year	Total	Lost	Traced
1947	10	4	6
1948	40	9	31
1949	22	4	18
1950	15	1	14
1951	8	-	8
1952	7	-	7
1953	4	-	4
1954	6	-	6
1955	14	1	13
1956	8	-	8
1957	8	-	8
<b>TOTAL</b>	<b>142</b>	<b>19</b>	<b>123</b>

TABLE IV

Table IV shows the distribution of the total cases by age, color and marital status. Color distribution was almost evenly divided, with 46.5 percent white and 52.8 percent colored. There were 66.9 percent who were married, 29.6 percent were either widowed or divorced and 2.8 percent were single.

The highest percentage fell in the 45-49 year age group, with 25 or 17.6 percent in that group. The median age is in the 50-54 year age group and average age at time of admission is 51.9 years.



Cancer of the Cervix by Age, Color and Marital Status  
TABLE IV  
Cervix Cases

Age	White					Colored					Color Unkn.			
	Mar.	Single	Div.	Wid.	Total	%	Mar.	Single	Div.	Wid.	Total	%	Grand Total	%
25-29	2	—	—	—	2	3.0	3	1	—	—	4	5.3	6	4.2
30-34	2	—	—	—	2	3.0	2	—	—	—	2	2.7	4	2.8
35-39	9	1	1	—	11	16.7	4	—	—	—	4	5.3	15	10.6
40-44	5	—	2	2	9	13.6	4	—	1	2	7	9.3	16	11.3
45-49	6	1	—	3	10	15.2	13	—	—	2	15	20.0	25	17.6
50-54	5	—	—	2	7	10.6	7	—	1	3	11	14.7	19	13.4
55-59	10	—	2	—	12	18.2	6	—	—	1	7	9.3	19	13.4
60-64	2	—	—	2	4	6.1	1	—	—	5	6	8.0	10	7.0
65-69	4	1	—	—	5	7.6	3	—	—	4	7	9.3	12	8.5
70-74	—	—	—	1	1	1.5	4	—	1	3	8	10.8	9	6.3
75	—	—	—	3	3	4.5	3	—	—	1	4	5.3	7	4.9
TOTAL	45	3	5	13	66	100.0	50	1	3	21	75	100.0	142	100.0

TABLE V

Table V describes the treatment given at the Tumor Clinic. Of the 142 cases, 109 or 76.8 per cent were treated at the Tumor Clinic. Only 20 of these had had previous treatment. The percentage distribution is figured for each type of treatment. Almost half were treated with X-ray and radium, 4.58 percent, while 26.6 percent were treated with X-ray alone, and 10.1 percent with surgery alone.

Cancer of the Cervix  
Percentage Distribution by Type of  
Treatment at Tumor Clinic

TABLE V

Treatment	Number	Percent
Surgery .....	11	10.1
X-Ray.....	29	26.6
Radium .....	3	2.8
Surgery & X-Ray.....	6	5.5
Surgery & Radium .....	4	3.7
X-Ray & Radium .....	50	45.8
Surgery, X-Ray & Radium .....	6	5.5
TOTAL	109	100.0
None	33	
GRAND TOTAL	142	

TABLE VI—Part 1

Of the 142 patients admitted, 109 were treated. Table VI is shown in three sections. The first gives the present status of the treated patients from 1947 through 1957. Forty-seven are living, fifty-four are dead and eight, or 7.3 percent, are untraced.

TABLE VI—Part 2

Part 2 divides the patients' treatment by date of admission. Of the 109 treated cases, 82 were admitted during the first 6 years of operation of the clinic, 1947 through 1952. Only this group could have survived for 5 years or more and during this period, 75 of 82 were traced.

TABLE VI—Part 3

Part 3 gives the relative apparent recovery rate of treated cases. Twenty-four or 32.0 percent of the 75 traced cases survived for 5 years or more.

Cancer of the Cervix

TABLE VI—Part 1

Present Status of Treated Patients  
1947-1957

Living .....	47
Dead .....	54
Total .....	101
Untraced .....	8
Total .....	109

TABLE VI—Part 2

Present Status of Treated Patients  
By Over and Under Five Years  
1947-1957

	Traced	Untraced	Total
1947-1952 .....	75	7	82
1953-1957 .....	26	1	27
Total .....	101	8	109

TABLE VI—Part 3

Relative Apparent Recovery Rate of  
Traced Treated Cases  
1947-1952

Surviving under five years.....	51
Surviving five years or more.....	24
Total.....	75

Percentage surviving five years or more  
24/75 ..... 32.0%

A review of the evaluation of results found in the annual report on the results of treatment in carcinoma of the cervix uteri published in Stockholm in 1953 shows that, out of 6,498 patients treated in 72 centers from all over the world, 2,547 were apparently well at the end of five years.<sup>2</sup> This is 39.2 percent. The range of rates in the individual series is all the way from 21.6 percent to 65.0 percent. Both these extremes represent very small series. The larger series such as that of Manchester, England, with 35.6 percent or of Stockholm with 41.7 percent, are probably more representative of actual results. Our results demonstrate what may be done by the team approach in the treatment of cancer and the importance to a community such as we serve of focusing the interest of all concerned on each site of cancer in turn, to effect continuing improvement.

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# Critique of the Tranquilizing Agents

HOWARD P. ROME, M.D.\*

The analogy provided by the antibiotic class of drugs is an excellent one in many ways with which to examine the actual status, clinical usefulness as well as the role of that group of drugs dubbed: tranquilizers. You will recall that Sir Alexander Flemming's discovery of penicillin is cited as a prime example of serendipity in modern science. Hugh Walpole in 1754 coined the term serendipity referring to the tale of the three princes of Serendip who were always discovering by chance or sagacity things which they did not seek. Serendip is the ancient name for Ceylon — where among other places on the India subcontinent, the plant *Rauwolfia* is harvested. The discovery of the usefulness of the alkaloids of *rauwolfia serpentina* in the treatment of anxiety and its various behavioral manifestations is another instance of serendipity in modern science. Then too, as if to underscore the poets observation that the best laid plans of men often lead us to quite different ends, the inquiry by the French investigators into the synthesis of certain antihistaminics led to the discovery of the usefulness of the phenothiazines and ushered in the era of the tranquilizers.

The analogy doesn't stop there. The advent of antibiotics stimulated the growth of enzyme chemistry as it relates to the metabolic function of living organisms at the same time that it provided a rational scientific methodology for the therapeutic attack upon a thereto-fore all too sterile area in medicine. The tranquilizers promise the same sort of boon for psychiatry. As a matter of fact, the surge of interest in dynamic neurophysiology in itself is a paramount reward. Mechanisms underlying consciousness and closely related to this the baffling phenomenon of anxiety are being looked at by groups of investigators who ten years ago never even appreciated their own anxieties let alone those of the near-

ly three-fourths of a million residents in our mental hospitals. If you will permit me to stretch my analogic simile, it appears that tranquilizers stand in the same relation to anxiety as antibiotics do to bacterial infection; they are each the pharmaceutical core of the drug treatment of these diseases.

Then too, there are other factors which warrant comparison: untoward effects, a plethora of chemical analogs of the parent substance, the relatively enormous cost of the drugs initially, the fantastic public interest in and demand for them, the inevitable misuse and abuse explicit in their shot-gun administration, their alleged panacea proportions, the hyperbolic claims made by a few of their medical proponents and pharmaceutical advocates; a true critique of tranquilizers requires a dispassionate inquiry into all of these facts. Obviously we have not the time for this — nor is this the propitious occasion.

I hope you will understand what might seem to you my arbitrary selection of just a few of these to discuss with you. Briefly then, something about their history. Currently there are two paramount categories in which the tranquilizers may be cataloged: The alkaloids of the Indian herb of the Apocyanaceae family named *Rauwolfia* in honor of a 16th century German Botanist Leonard Rauwolf and the chemical congeners and substitutes of the tri-ring group of substances generally known as phenothiazine. There are other substances which we will mention briefly but the basis for their claims to be included are less well established at present. In any event these two categories may be considered prototypical.

Ayurvedic medicine in India for centuries had resort to various crude decoctions of the *rauwolfia* plant in the treatment of such heterogenous conditions as dysentery, epilepsy and hypochondria. In the early 30's Indian investigators learned of its potency in the treatment of hypertension so that by 1940 more than one

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million Indians were using it for hypertension alone. Finally in 1949, a report of this use first appeared in a western medical journal. On the heels of this the wheels of modern chemistry ground pure reserpine and modern pharmacologic technics testing its effect upon monkeys noted the remarkable calming effect it had upon these notoriously uncooperative beasts. The contrast between it and the established effects of barbiturates (heretofore the calmer par excellence) was striking. It is not to gainsay the acumen of those investigators to say that once witnessed it was quite obvious that here was an agent of strikingly different dimensions. It tranquilized without restricting coordination as do the barbiturates. It was sympatholytic because it seems to block afferent impulses to central sympathetic nervous system centers, it affected the reticular network (of which we will say a bit more in passing), it produced sleep-like changes without the clinical or EEG effects characteristic of barbiturate anesthesia and by a step-wise, damping effect in response to certain stimuli it produced a facilitation of synaptic transmission. There are a number of other actions but suffice it to say here was an agent possessed of different pharmacologic properties. Aside from the interest which was catalyzed in the clinical areas important basic inquiry proceeded apace — the metabolism of C-14 tagged reserpine has been studied, the relation of the action of reserpine to such active metabolites as serotonin has offered another vast field and last but certainly not least here was a chemical agent which did amazing things to psychiatric patients.

I have no more time than to barely touch upon this facet, which as a clinical psychiatrist I know a little more about than I do such recondite matters as the biochemistry and neurophysiology which I have retailed second hand to you.

Reserpine as used in psychiatric treatment employs doses of an order of magnitude three to twenty times greater than those used by internists in the treatment of hypertension. Such doses produce the kinds of dramatic clinical changes with which you are familiar: a palliation of anxiety and the behavioral reflections of

such tension: overactivity, excitement and the like. It changes mental content — in some instances there is a striking abatement of delusionary thinking, hallucinations and the typical social and affective withdrawal of the psychotic. It makes patients more accessible to other psychotherapeutic maneuvers. It certainly makes their nursing care easier. State hospital superintendents report that the all-too-familiar bedlam character of their chronically disturbed wards has changed. The patients are tidy, feed, bathe and clothe themselves, the use of physical restraints has fallen off markedly. The acute psychotic episodes have become manageable.

There are untoward effects which warrant notice. For those physicians such as you who might have occasion to prescribe them for their tranquilizing effect in non-psychotic conditions there is an untoward effect of major proportions with which you should be familiar. While this experience has been seen more frequently in patients being treated for essential hypertension, it is not limited to this group.

As many as 20 per cent of a group of nonselected patients with essential hypertension have experienced depressions of pronounced clinical significance: retardation, withdrawal, depersonalization, feelings of difference and unreality, repetitive thinking provocative of anxiety and all of the other typical features of an agitated depression. A number of instances of suicide have occurred while a still larger number of these patients have required EST to terminate these depressions. This observation seems to be important enough so that every physician who prescribes reserpine for non-psychotic patients should be mindful of its likelihood of occurrence.

There are other effects: hypotension of the orthostatic variety with blackouts, nasal stuffiness and dryness of the mouth, the complaint of a peculiar taste, muscle aches and stiffness, diarrhea, a sense of chilliness which may be related to a detectable tremor, a decrease in body temperature and perhaps most significant when the patient is on higher dose of the drug — a Parkinson-like syndrome:



cogwheel rigidity of the extremities, pill rolling, mask-like facies, sialorrhea, shuffling gait and greasy skin. More rarely we have seen a maculo papular rash and early in drug treatment there is sometimes pronounced conjunctival injection. Epileptiform convulsions have been reported.

The second prototypical group of drugs of the tranquilizing series is the phenothiazine group. Of these chlorpromazine is the best known, more widely tested and studied and the most popular.

To give you some idea of the scope of these drugs in the practice of medicine in this country, I should point out that in dollar volume of sales it now stands fourth with antibiotics, first, analgesics and antihistaminics second and laxatives third. In early 1956 a modest estimate of the tranquilizer market according to *Business Week Magazine*, March number, was 75 million dollars. Six months later this was revised up to 95 million with the prospects for the 1957 market being over 125 million with which it threatens to overtake the laxatives. I will allow you to draw your own conclusion as to what this augers for our culture in the mid-stream of the 20th century.

The French pharmaceutical industry in the 30's first initiated the interest in what have come to be known as the antihistamine group of drugs: The thio diphenyl amine derivatives — stemming from this work the substituted phenothiazine drugs have been synthesized.

Aside from the medical historical interest of this fact, there is another consideration which prompts its mention. The Rhone-Poulenc Laboratories hold the world patents on almost all of these substances and their marketing elsewhere in the world is only upon the license of this company. This should be borne in mind when the drug store price of these agents is considered. They are not inexpensive and while you who have been flooded with various samples for clinical trials may think it is of no personal concern, I have to remind you that a considerable chunk of your state and federal tax dollar goes for the purchase of these drugs for use in state and federal institutions.

However, since the anxiety of economics is not soluble in Thorazine, I suspect we should confine the remaining remarks to its purely clinical consideration. By and large it is like reserpine in its tranquilizing effect in contrast to a sedative effect. However, it tends to produce constipation rather than the annoying diarrhea of reserpine. Palpitation rather than tachycardia and this can be of marked annoyance to the patient as well as a source of further anxiety for pulse rates as high as 120/min are not uncommon. It, like reserpine, produces miosis and hypotension, it increases rather than lowers body temperature.

It seems more prone to produce a variety of dermatologic lesions with which doubtless you are familiar, urticaria as well as a contact type of dermatitis frequently seen on the hands of nurses who handle the drug. Photosensitivity is common — varying severities of erythema. Some of these skin lesions appear similar to a Henoch-Schoenlein type of purpura. Eight per cent is said to be the incidence of skin lesions. Vesicles and even bullae have been noted. Some reporters say the skin reaction subsides even though the drug is continued.

Since in a general way you are familiar with its useful properties, I will dwell in the time that remains upon the untoward effects.

First, however, a word about dose: it seems to me that other things being equal a range of from 100 to 200 mg. per day is therapeutic for those grades of anxiety which warrant its use — in contrast to the use of other substances — in the first place. As an aside, I might add that in psychiatric hospitals the physicians are graded into one of two groups according to the liberality of their prescribed thorazine schedules. The cut off between the high and low range is 1000 mg. per day! Like every other drug, the ideal dose is enough to accomplish the desired therapeutic objective. The disturbance of persistent wakefulness as a reflection of anxiety is the most common symptom of course. While a great deal of investigation of the locus and nature of the action of these drugs has been done, much more needs to be done to delineate the actions

precisely. A preponderance of evidence seems to point to the subcortical reticular network as the paramount site of the drugs critical actions. A vigilant state of anxiety is only one of a number of manifestations. The past experience of the anxious person largely determines the way in which he responds to it subjectively and objectively. It is a common clinical experience that one patient displays what might be considered an anxious response by such visceral symptoms and signs as rapid, sighing respirations and the hyperventilation syndrome while another complains of crampy abdominal pain and diarrhea; still another patient betrays his anxiety in a more obvious way by sweaty palms, restless activity, dryness of the mouth and a subjective feeling of imminent catastrophe. Suffice it to say the signs and symptoms of anxiety are protean in their manifestation.

Since these drugs seem to possess the unique capacity to slake anxiety the question then follows: How do they act? A preponderance of evidence seems to point to the subcortical reticular network as the paramount site of action. In recent years this area of the brain stem has been the focus of considerable attention because of its crucial role in the integrative action of the central nervous system. Wilder Penfield has coined the term *centrencephalon* to describe the coordinating function of the subcortical regulating mechanism of which the reticular network is an important element.

There are two great pathways to and from the cortex. The classical motor and sensory systems constitute one while the central, multisynaptic network of short axon relay neurones constitutes the other. The former pathway is characterized by the rapidity of its conduct of nerve impulses and by the precision and specificity of the target areas stimulated. In contrast the reticular network is a diffuse projection system. The time of transit of a nerve impulse through it is much slower and an important action seems to be the mixing and integration of impulses from all of the important areas of the nervous system. Definitive neurophysiologic investigation has demonstrated the fact that among its more important actions is the regulation of consciousness.

The complexity of the issues involved in understanding the neurophysiology underlying emotional states is of such an order of magnitude that to date only bits and parts have been sketchily outlined and these have been strung loosely to form hypotheses. It is upon these guesses and surmises that the inquiries are based which comprise the tentative explanations of the actions of these drugs.

In an oversimplified outline then these are some of the postulates.

There are many gradations of consciousness. In contrast to the older static all or none conception, consciousness in a neuropsychological sense is a spectrum of states — a gamut which ranges from coma on the one hand through all the various levels of sleep to the various levels of awareness on the other. It follows then that perception, attention, memory, recall and an emotionally full appreciation of the orderly sequence of events are some of its attributes. By the same token alterations in consciousness are typified by a narrowing or even an obliteration of some of these attributes. For example, a person who is said to be preoccupied is so by virtue of being unaware of what is going on about him. Sometimes he is so preoccupied that he fails to hear what is said or even see what passes by: he has a gun barrel outlook so to speak.

The patient with organic brain disease for all intents and purposes continues to live only in the present. For him there is no past or future and thus it is that he is free from worry and anxiety. The drugged patient reacts similarly.

The tranquilizing drugs seem to be effective to the degree and extent that they alter consciousness in the rough sense of this definition of it. The critical neurophysiologic mechanism for this would appear to be the reticular network for its dynamic operation is such that through it to the overlying cerebral cortex, feed affective impulses as well as alerting and sensory messages. Its physiologic composition can permit a filtering of messages as well as an integration of them. All of this can be done without interference with the primary afferent sensory or afferent motor pathways. Thus crudely it is possible for drugs which can alter the



synaptic transmission of impulses in this network to mute consciousness and thus alter or modify emotional response. Since it is a two way street it has the capacity to modify both input and output: sensory response and motor behavior.

In a very gross way this is what seems to happen if the clinical response to these drugs is interpreted in this schematic physiologic fashion.

Despite what looks like sleep these patients can be aroused and become alert with little or no disturbance in perception. There is no interference with nocturnal sleep. Some of the initial hypersomnolence seen disappears when the drug is continued.

A small percentage of patients develop what might be termed paradoxical anxiety which portrays itself as insomnia. It would seem that this is confined to those patients whose personality is so organized that the very relaxation the drug confers is frightening to them in that to them it connotes loss of control, a sense of being different against which they struggle.

In high dose range, — apathy, indifference and insensitivity to surroundings obtains.

It is not infrequent to see an evening temperature spike to 102 degrees or even 103 degrees but this hyperthermic response is variable.

Parkinsonism develops in about 4 per cent but is most usually a consequence of high doses over a period of time.

Then too, you are familiar with the so-called thorazine type of jaundice a painless obstructive variety which on investigation is seen to be of the intra-cannicular type. From investigations which have been done, it would seem that an increase tone in the biliary ductal system is responsible for at least in part for this stasis type of jaundice which promptly subsides without residuals or evidence of hepatocellular damage once the drug is withdrawn.

Finally in passing, it should be noted that the chemical structure of these agents is of the type which in susceptible patients produce granulocytopenia.

There are said to be 41 drugs of the tranquilizer class currently under clinical

trial. Many of these agents are not yet available commercially for the Pure Food and Drug Administration has established more stringent requirements for their acceptability than was true previously. The entire problem of behavioral toxicity, for example, has need to be studied with greater precision for the day-in-day-out consequences of taking these drugs has yet to be assayed in all necessary dimensions. For example, the fitness of a person to operate a motor vehicle under the influence of these agents has caused responsible authorities much concern. Similarly the nature of their effects upon learning and ordinary social behavior has to be studied. They are being prescribed in increasing amounts and thus potentially have untoward efforts in these spheres.

Their use in the adjunctive management of certain difficultly controlled symptoms is another sphere about which unfortunately, I can do no more than mention in passing. For example, I think we have been able to demonstrate quite significant improvement in the tolerance of otherwise intractable pain by the use of these drugs both alone and synergistically with the recognized analgesics. The boon they provide in easing the lot of the dying patient is something about which a great deal more has to be said. We have also noted that the unpredictable fluctuations in the adequate control of so-called brittle diabetes can be corrected in a large measure by the judicious use of these agents. Similarly refractory bronchial asthma, the irritable bowel syndrome and the anorexia, nausea and vomiting of renal failure are other clinical conditions which lend themselves to this type of palliative therapy.

In conclusion it seems wise to come back again to the philosophy underlying our practice, for only in that way can the ends we pursue be sought reasonably and with the most economy. Man lives a precarious existence poised on the narrow ridge between two constantly changing environments. In the external environment he has to cope with stress in the form of constant change with its overtones of challenging threats. He learns in a slow painful way and comes to an uneasy peace which we euphemistically

call adaptation. Adaptation is relative; given sufficient change or change sufficiently rapid and this tenuous peace fails. The consequences of life under these circumstances is anxiety.

Similarly his internal environment is an equally vast front on which he lives uneasily. It too, changes. Its waxings and wanings are measured by the ebb and flow of the hormonal tides, the shifts in metabolic balance, the delicate fluctuation of electrolytes and catabolites which are constantly buffered or removed to maintain the uneasy peace in the internal environment which we euphemistically term homeostasis.

It is little wonder then that since ancient times the art of Asclepius has been

sought in an unceasing effort to find clues to a more permanent and lasting peace on these warring fronts. It is little wonder that we humans fervently woo and seek to possess the artist's daughter Panacea — the All Healer for peace and tranquility are her dowry. Unfortunately, like so many charms those which are alleged to be Panaceas lead to contempt with greater familiarity and are somewhat less than their reputation alleges upon closer examination.

So it is with the tranquilizers — the latest of Panaceas brewing: they are somewhat less than they are believed to be and unhappily like so many boons they come at a price which sometimes is more than the market can bear.

## ◆ *What's* NEW ◆

### OTOLOGY

A. J. BRIZZOLARA, M.D.\*

For approximately 20-25 years the field of Otolaryngology remained static with little research being instituted and an attitude of the acme has been accomplished held sway. All effort was directed toward the eradication of infection, by surgery, in acute and chronic infections of the middle ear and mastoid. The simple and radical mastoid operations with nothing except the removal of all infection as the goal with almost complete disregard for the hearing mechanism, were considered the epitome of surgery in this field. With the advent of the chemotherapeutic and antibiotic era some 20-25 years ago this attitude began changing and over the past ten years tremendous strides have been made. As the floodtide of surgery for acute mastoiditis rapidly dwindled to less than a mere tric-

kle, under the influence of chemotherapy and antibiotics, thinking men in Otolaryngology began building brick by brick, through research, an entire new concept pertaining to Otolaryngologic surgery. Great strides in the understanding of the physiology of hearing sprouted from this research and based upon this new fundamental knowledge there grew step by step an entire new concept of surgical Otolaryngology.

The fundamental principle of surgery of the ear is still eradication of infection, but in light of knowledge gained through research the accomplishment of this basic principle is carried out through an entirely different surgical approach and second only to the removal of infection is the improvement or restoration of hearing. In addition there are now available procedures for improving or restoring

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hearing in ears, where there is no infection, in other words plastic reconstruction of the sound conducting mechanism.

Ironically the very things, chemotherapy and antibiotics, which produced collapse of the old concepts made possible the development of the new.

Before delving into this new surgery one must first understand something about hearing. In reality there are two parts to the ears as far as hearing is concerned; one part, the conducting mechanism serves the purpose of conducting or transmitting sound energy from the outside world to the other or receiving part. This conduction mechanism consists of the auricle, external auditory canals, tympanic membrane and the middle ear containing the ossicles. This part is analagous to a train carrying passengers from one point to another. The second part of the hearing mechanism as the cochlea with the contained organ of corti and the 8th nerve, which can be compared to a receiving station. It is with the first part or conducting mechanism which we are primarily concerned in—new otology—for even with our new knowledge we still cannot help hearing impairment based on pathology in the organ of corti. Now we must remember that sound energy originating in air, conducted by part one of the hearing apparatus to the organ of corti, passes from a medium of air to a fluid medium, the perilymph in the inner ear, and consequently there will be an impedance or loss of energy as this transfer takes place unless some means of increasing the sound energy is available. This increase in sound energy is accomplished by virtue of the fact that sound energy is delivered from a larger surface, the tympanic membrane, to a much smaller surface, the oval window, through a lever system, the ossicular chain, overcoming this impedance of transfer from air to fluid.

In the new surgery of the ear we are concerned with correcting pathologic alterations in this sound conducting mechanism.

“Accidents, disease, or previous operations may affect the function of this part of the hearing apparatus. A great variety of defects are observed. Essen-

tial parts of the system may be damaged or entirely absent, or their functional efficiency reduced by stiffness, friction, or an increase of mass. All these pathologic changes are reflected in alterations of hearing.”\*

The aim in repairing abnormalities of this conduction apparatus is to reestablish, as far as possible, the impedance matching anatomy of the middle ear. This is accomplished by a variety of methods depending upon the pathology present. Procedures range all the way from simple myringoplasty (skin grafting a drum defect) and mobilization of the stapes to complete reconstruction of a defective conducting mechanism including fenestration surgery. All of these procedures are dependant on a servicably functioning inner ear.

Myringoplasty is utilized to reestablish a large intact tympanic membrane, when this membrane has been interrupted by a central perforation of the drum. It is accomplished by creating a raw surface by removing the external layer of the drum remanent, excising the edges of the perforation and placing a skin graft on the created raw surface, covering the drum defect.

Mobilization of the stapes is used to free a stapes footplate which has become fixed by otosclerosis, thus obviating the transmission of sound energy through the oval window to the perilymphatic fluid. This procedure approaches the pathology directly through the external auditory meatus, the drum is reflected forward exposing the middle ear contents and the fixed stapes is “rocked” free. This procedure constitutes crashing through the road block to sound conduction. In the event this fails to produce the desired improvements in hearing, fenestration surgery may be undertaken at a later date. This procedure also approaches the trouble through the external canal, but requires the removal of some bone of the external canal and mastoid to create working space. The basis of this operation is to detour sound energy around the otosclerotic road block at the oval window by creating a new opening into the perilymphatic space by opening the ampulary end of the lateral semicircular canal. This open-

ing is covered either with a skin flap created from the external canal or a free graft.

The reconstructive procedures directed toward pathology of the sound conduction mechanism are varied and, as stated, cover a wide range. All these procedures may be grouped under the term tympanoplasties. That is plastic reconstruction of the tympanum or middle ear. Most all of these techniques approach the trouble through the external auditory canal, doing away with the disfiguring post auricular incision. They may consist simply of exposing the middle ear cavity and cutting or removing binding adhesions. In the absence of all or portion of the incus, thus interrupting the ossicular chain, it may be necessary to reposition the drum so it is in contact with, or place a graft in direct contact with, an intact stapes. In the event the crura and head of the stapes is missing along with absence of part of are all the other ossicles it may be feasible to place the drum or graft in contact with a prosthetic appliance placed

in the oval window or make direct contact between drum or graft and the residual stapedial footplate in the oval window. All of the tympanoplastic procedures are designed to reestablish a contact between perilymphatic fluid in the inner ear with sound energy from the outside and are varied depending on the pathology found. These techniques allow us to offer to the patients, in whom indicated, something we could not heretofore offer; that is hope of eradicating pathology and at the same time improved hearing. Suffice it to say that this presents a tremendous stride in Otology and really constitutes *something new*.

#### CONCLUSION

Through knowledge gained by basic research we now have at our command varied procedures to improve hearing in a large group of people, with hearing impairment based on pathology of the conduction apparatus, in whom up to 5 to 10 years ago nothing could be offered.

\*(Pick, Emery I.: Annals of Otology, Rhinology and Laryngology Vol. 66: Page 1044, May, 1957.)





A TEACHING SEMINAR  
FROM THE  
UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE

## Understanding Interpersonal Relationships In Brief Contacts with Patients

CHARLES S. BETTS, M.D. AND

WILLIAM G. REESE, M.D.

The practice of medicine involves special relationships with patients which have tremendous psychological impact. In such relationships the personality of the physician is potentially one of his most effective therapeutic instruments. The effectiveness of his personality increases his ability to relate to patients in terms of their emotional needs, and their individual personalities.

Historically the main body of physicians have given relatively little attention to the scientific elucidation of the therapeutic principles of interpersonal relationships. In large measure the physician has depended upon the empirical development of his intuition and has ascribed this part of therapeutic proficiency to the *art* of medicine. The experienced physician has usually become highly effective in this psychological aspect of practice, but often his acquisition of this knowledge has been haphazard with consequent emotional and financial expense to his patients and himself.

Largely during the twentieth century a specialized branch of medicine, psychotherapy has been forced to develop a significant knowledge of the principles and techniques involved in interpersonal relationships. Increasingly, other branches of medicine are demanding that this knowledge be made more generally available in an understandable and useful way. Associated with these requests many practitioners have demanded that these principles be tailored to fit their own needs and time limitations. That is, "Tell us what we can do when we have only 15-20 min-

utes to spend with a patient." Along these lines the dermatologist might say, "I know in neurodermatitis the patient needs help with his emotional problem but what can I do? I only see him for 15 or 20 minutes a contact." We would like to propose that this is not so hopeless. If a physician structures his brief interviews so that there is a thread of continuity these 15 minute interviews can add together into hours of meaningful contact. This is true in obstetric cases, chronic illness, and other patient problems in which repeated contacts are necessary. The last case example in the paper will elucidate this further.

It is suggested that *the first goal in any treatment program is to establish effective interpersonal relationships*. The caption interpersonal relationships has become such a cliché that it is easy to lose track of the meaning, and particularly of the physician part of the patient-physician interaction. One important implication is that the physician must know himself and must become as well acquainted as possible with his own attitudes, prejudices and sentiments. To this end the physician in psychoanalytic training spends many hours and a significant amount of money in a guided self-exploration of his own personality. This is neither practical or necessary for most physicians, including most psychiatrists, and we might remind ourselves that the founder of psychoanalysis was analyzed only by his own thoughtful, critical and methodical introspection. Perhaps a satisfactory compromise is to evaluate critical-

ly our feelings and behavior toward particular patients or kinds of patients when these seem inappropriate, unpleasant or anxiety-producing. When this does not succeed we can refer such patients before we have further traumatized them, or before a more or less subtle war of nerves has developed. The dissatisfied patient may express dissatisfaction directly, demand more time, seek out another doctor, or conceal his resentments even from himself and carry on "underground" maneuvers that reflect his own more concealed personality traits. For his part, the physician may feel guilty and grudgingly give more time, become openly irritated, or become involved in inappropriate unconsciously motivated counter maneuvers.

We need not labor the complications of poor relationships. What are the methods used to establish and maintain good relationships? The initial impressions made by the physician are tremendously important. The patient presents himself with the manifestations of a disease or a disease or both. He more or less reluctantly places his dearest possession—himself—in the hands of a stranger, hoping for the best and often fearing the worst. He exposes himself literally and psychologically. The entire complex of factors heightens his sensitivities, increases his defensiveness and often brings out his least endearing qualities. The doctor responds constructively by careful, understanding attention; thoughtful listening; discreet, kindly matter-of-fact interrogation and careful medical examinations. He allows the patient to express his misgivings without taking personal offense. He answers questions in understandable terms. He avoids premature reassurance. Of particular importance, when the allotted time is brief he explains that he will see the patient more adequately as soon as time can be made available, and he does not begrudge extra time with new patients because he knows that he can save time and extra visits in the future by an early thorough personal acquaintance with his new patient. For this initial and later contacts the useful frame of mind is one of sympathetic understanding without identification so that he can think like the patient without suffering

with him or reinforcing the patient's anxiety by becoming anxious himself.

An effective relationship requires a realistic working understanding between doctor and patient with especial attention to roles and goals. The ethical demands in such a relationship are codified and well understood as part of the heritage of the profession. Other aspects of the relationship need clarification. The professional relationship, in our culture, is a contractual one involving payment for skilled judgment and services. Any contract is fraught with potential danger when the terms of the contract are not clear to both parties. If the patient comes with the orientation of a small child toward an all-knowing parent (and the ill patient has often regressed to such infantile attitudes), the physician cannot possibly fulfill the patient's magical desires. If the physician shares the same omnipotent fantasy it is even more disastrous. In practical terms it becomes necessary for the physician to make clear what his own therapeutic goals are and what his working methods are. Treatment cannot progress unless physician and patient are in relative accord in relation to goals. The patient who is dedicated to remaining ill can only frustrate the physician who has not discovered this motivation. The significant clues may come from the fact that the patient may have seen many physicians, have taken many medications with no relief or with transitory help or complains of his symptoms without dismay, even with satisfaction. When the physician discerns such unhealthy motivation he can shift his attention to an attempt to discover the basis for it. The physician could suspect that these symptoms serve the purpose of binding and concealing anxiety and he should look to the patient's feelings and relationships for the significant clues. If he has the preconception that this is malingerer or a malicious attempt to discredit his ability, he cannot help and should not even try to help unless he can conceptualize the problem differently.

What do we mean by attention to roles? Briefly, the doctor has his conception of his job as a physician, which may or may not correspond with the expectations of the patient. For example, consider the re-



relationship to a patient who is a relative or close friend. When the patient first visits the friend-doctor there is probably a brief social period in which their various experiences are shared and relived. This can be mutually enjoyable but there soon comes a time when the question is asked, "well what brought you here?" By this time his role with the patient is a mixture of friend and doctor. This can be very difficult to handle and may keep the patient from speaking freely, or may result in the patient's insisting on treating the physician more as a purely social friend than as a medical authority. And he may pay little attention to the therapeutic program. Becoming aware of this and being able to separate out this mixture will simplify the task and produce a more satisfactory therapeutic relationship with the patient. Clarifying the doctor's position with the patient will bring more clearly into the latter's awareness what he is doing, and he will have to decide whether he wants a friendly advice session to be taken lightly or a meaningful professional relationship. If the decision is a compromise, at least it is a mutually conscious compromise which lessens misunderstanding by clearly expressing the limits of this relationship. Clarification of roles is often prerequisite to agreement on goals of therapy.

*The second goal in therapy, which overlaps the other goals, is to assess accurately personality functioning of the patient* as judged by key attitudes and characteristic interpersonal responses. A real test of the physician's interpersonal skill in accomplishing this is his ability to understand the partially concealed meaning behind the patient's manifest verbalizations. The patient "talks" with facial expressions, bodily postures and movements, as well as with words. When the verbalizations and the facial-body movements of the patients seem consistent, the doctor feels that he understands what the patient is saying and that the patient means what his words say. When there is inconsistency between these two forms of motor expression, the astute physician will take his cues from the nonverbal communications. The patient who twists in his chair, looks at the floor, and tightens the muscles around mouth and eyes,

refutes his words as he says, "Oh, I believe you, Doctor." At times the doctor's anxiety may cause him to respond inappropriately to a comment from the patient which he interprets as criticism. The patient who expresses doubt about the doctor's advice or asks for consultation from another doctor may be signifying his anxiety rather than maligning his physician. A curt response from the doctor may hamper any further relationship. Calm inquiry might reveal alternative explanations. The patient may be saying, "I am not able to accept your logical advice, yet I fear this might alienate you from me at a time that you are very important to me and I very much need your help." It could mean that the patient is not yet able to accept the implications of the advice and hopes to find a doctor who will substantiate his attempted denial of a particular illness (using the same mechanism resorted to by patients who avoid chest films because they might not be able to tolerate the findings). Again, the patient might be asking, "Do *you* really have confidence in your prescription?" Of course the correct inference is not left to speculation; often the patient will clarify the meaning if the physician will listen sympathetically and undefensively. A recent example of defective communication came to our attention in our psychiatric clinic. An 18 year old white youth came to us rather circuitously asking for help with impotence. He had found the girl he wanted to marry but felt he could not propose marriage because of this problem. He reluctantly gave the story that he had contracted gonorrhea from a schoolmate two years previously on the occasion of his first and only indiscretion. Apparently because of fear and guilt related to strict upbringing and a strict conscience, the sexual union had been very brief. He was unable to confide in his parents about the symptoms of the infection. He did not approach a physician until three months later, apparently because he expected the physician to be a strict, unforgiving authoritarian like his father. He reported to us that the doctor has chastised him for coming so tardily and had told him the late treatment might make him *sterile*. To him this meant *impotent*, perhaps partly because

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his experience had convinced him that he was sexually impotent. This was in keeping with his predetermined self-concept of non-specific impotence in social relationships. It would be insufficient, if not completely inaccurate to label this as iatrogenic disease and it is entirely possible that our patient had completely distorted the first doctor's comments in view of his apprehension at the time of the first examination. The thumbnail sketch is presented only to emphasize the importance of accurate communication.

*The third goal in therapy is to utilize ones knowledge of the patient's personality with therapeutic effectiveness.* The trusting, unsophisticated, uncritical patient, who regards his doctor as a wise and helpful authority responds well to simple explanations and instructions communicated forcefully and authoritatively. The well-educated, scientifically trained, upper class patient (such as another physician) obviously needs more complete pronouncements delivered less dogmatically. The psycho-neurotic with many self-doubts and with an accumulation of medical experiences which have never been entirely satisfying demands greater patience, time and interpersonal skill. The experience of a physician involved in psychotherapy with a particular patient may be likened to the experience of a skipper sailing an uncharted course. Just as the skipper knows the principles of navigation, his own ship and his own competence, the psychotherapist is aware of his own personality and his own abilities and limitations. The skipper loses the main channel at times and even enters blind coves, but he corrects his course in keeping with new information. The psychotherapist finds that a particular tack is unyielding or distressing and tries different approaches and techniques. The skipper corrects for cross winds, undercurrents and headwinds but does not prematurely give up seeking his destination or skuttle the ship. The therapist stays with his patient when the going is rough. The skipper who finds that his destination cannot be reached after a reasonable attempt gives up the quest as an unsuccessful voyage, not as a devastating failure. The therapist who fails to reach a reasonable goal with reasonable effort discharges or

transfers his patient gracefully without attacking the patient as an unprincipled saboteur.

Finally, a brief account of a particular patient seen for a few brief contacts by one of us (C. S. B.) will serve to summarize some of the principles enumerated. Mary N., a 31 year old single school teacher came complaining of recurrent, severe headaches of several years duration. Rapport was established with reasonable ease and the nature of the working relationship was agreed upon. A thorough work-up led to a diagnosis of migraine headaches. The initial therapeutic efforts depended heavily on medications, but gynergen and other medications produced no lasting benefit. The cooperative search for useful clues continued during repeated brief contacts and was rewarded by a detection of a useful lead. It became clear that most of the headaches occurred on week ends. On further visits, as the patient began to participate more wholeheartedly, she revealed that week ends were often the occasion of visits to see her mother in a neighboring town. At first the mother was described and consciously perceived by the patient, as a completely wonderful person. She then began a gradual departure from this conventional stereotype of mother as she discovered that she could do so without risking the doctor's rejection of her hidden feelings. Thereupon she began to see another picture of her mother as a very demanding person who insisted on the week end visits and who otherwise enslaved her. As these unacceptable thoughts pervaded her awareness, she retreated briefly to a discussion of her presenting symptom and critically asked the doctor why he was interested in her personal life when she was coming for treatment of her headaches. This critical challenge of the physician was a crucial incident in therapy, and would have terminated the relationship if the physician had counterattacked as if the patient were challenging his competence, if not his honor. The doctors expectant silence produced a question as to whether he thought the visits with mother had anything to do with the headaches. The doctor calmly asked what she thought about it and a flood of verbal confirmation followed with resentment toward



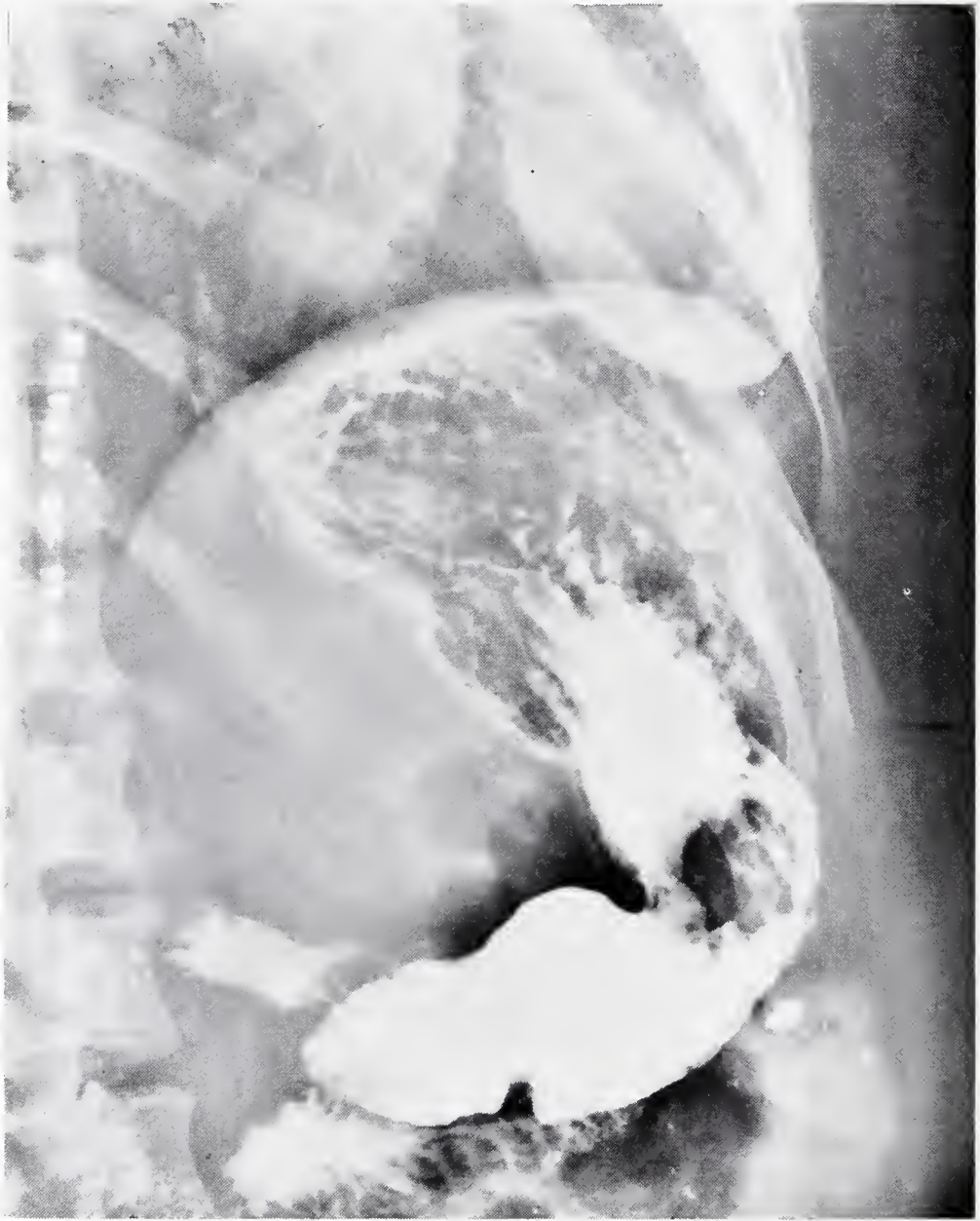
mother expressed in feelings as well as words. She then began to form a more realistic appraisal of mother and made plans to deal more effectively with her in the future. The headaches became milder, less frequent and finally absent.

In summary we have proposed that explicit attention to interpersonal relations is useful for all physicians and that the nature of such relationships demands scientific scrutiny. We have enumerated some relevant principles which have been enunciated by many clinicians (particularly psychotherapists) during the past half century, and we have attempted to give some notion of the application of these principles, especially in brief con-

tacts with patients. The physician should establish realistic working relationships with the patient by early clarification of roles, goals and methods. This involves carefully disabusing the patient of unrealistic demands and expectations in a manner which preserves and fosters his self respect. The physician should relate consistently but with imaginative flexibility to new developments in the interaction. He must establish and maintain effective communication. This necessitates continual self-observation to avoid punitive or otherwise unhealthy attitudes toward the patient. The demands on the physician for effective interpersonal relationships are great, but the rewards for success are worth study and effort.

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# What Is Your Diagnosis?



**CLINICAL DATA:** 70-year-old, colored female had loss of weight 20 pounds, loss of appetite, weakness since September '54 massive hematemesis.

**FOR ANSWER SEE PAGE 139**



# Arkansas Public Health at a Glance

## Recent Diphtheria Trends in Arkansas

Illness and deaths from diphtheria have steadily declined in Arkansas in the past 20 years, with steady and increasing immunization of infants and children against this disease. This preventive program has been carried on both by private physicians and by local health departments. Diphtheria cases and deaths are shown in the following table:

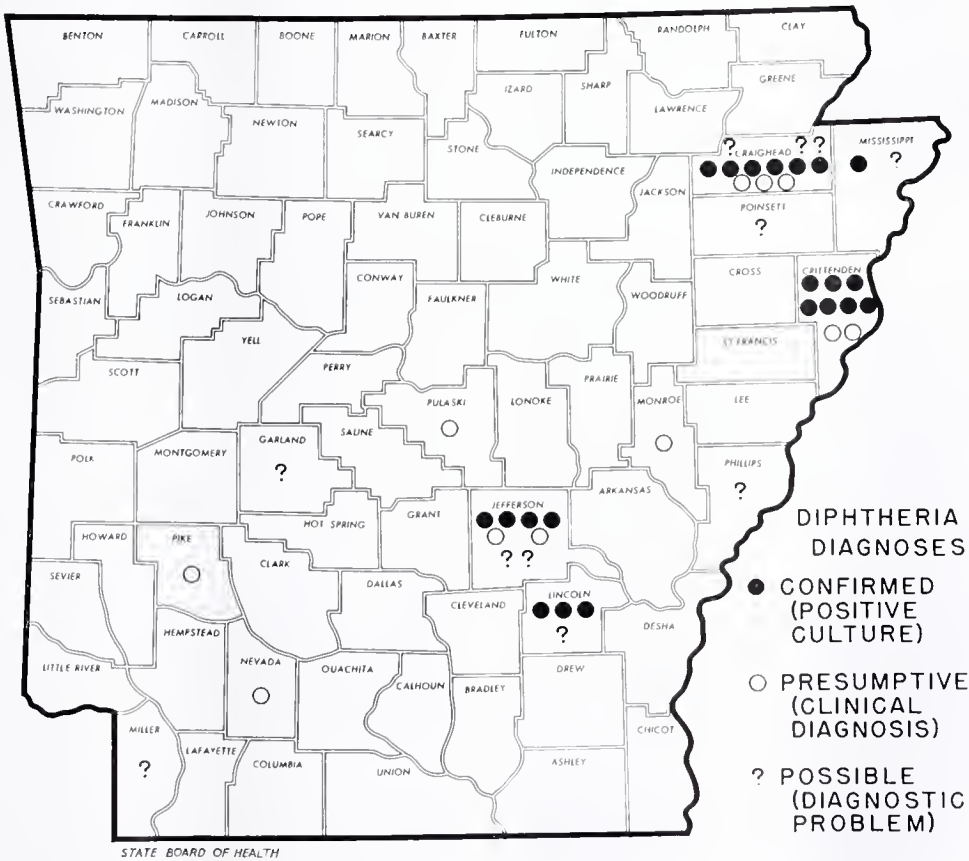
Year	Cases	Deaths
1937	564	113
1938	711	104
1939	589	75
1940	397	66
1941	510	52
1942	453	54
1943	290	41
1944	328	45
1945	511	50
1946	346	38
1947	251	20

1948	157	11
1949	192	16
1950	159	9
1951	96	16
1952	52	4
1953	32	3
1954	31	5
1955	11	0
1956	23	3
1957	46	4

It will be noted that the last two years have shown a small but definite increase in cases and deaths, from a low point in 1955. As an active diphtheria immunization program has increasing success, the natural level of immunity against diphtheria falls in persons who have not had recent diphtheria immunization because they are no longer repeatedly exposed to

\*Sponsored by the Arkansas State Board of Health.

### DIPHTHERIA IN ARKANSAS — 1957



the disease itself. Very few adults have received continued diphtheria immunization in the past, with the result that the proportion of all diphtheria in persons over 10 years of age has tended to rise in recent years. This situation has been a cause of concern to the Arkansas State Board of Health. Therefore, in 1955, when a vaccine suitable for use in adults without preliminary sensitivity testing became available, this vaccine was purchased, combined with tetanus toxoid (Tetanus-Diphtheria Toxoids for Adults). These trends are shown in the following table:

Year	1951	1952	1953	1954	1955	1956	1957
% of cases							
10 years							
and over	21.8	30.9	40.6	29.0	45.4	56.5	28.3

In 1957, several sudden localized outbreaks among children emphasized that immunization in this group is also inadequate (see accompanying map). The program of diphtheria immunization has received little emphasis during the intensive campaign for poliomyelitis immunization. Now that both cases and deaths from diphtheria are increasing and threatening to exceed those from poliomyelitis, it is clear that new emphasis must be placed on this immunization, both for children and adults. Diphtheria-Tetanus-Pertussis, and Diphtheria-Tetanus antigens for children, and the new Tetanus-Diphtheria Toxoids for Adults, are all available to physicians from local health departments for their office use in this endeavor.

The recent increase in diphtheria has given rise to sufficient local concern so that legislation making diphtheria immunization compulsory has been proposed by at least one state legislator. The science of immunization is highly technical and rapidly changing, so that the Arkansas State Board of Health does not favor crystallization of patterns of immunization for any one disease through special legislation. However, a clear obligation to combat the situation is recognized calling for greatly increased emphasis on diphtheria immunization for children and adults on a voluntary basis. Such a program can only be successful, of course, if every physician makes it a part of his daily office practice. Diphtheria can be

eliminated in Arkansas. Let us all finish the job!

## RESOLUTION

**Dr. Fred J. Gray, Jr.**

On May 7, 1958, one of our most respected and competent members, Dr. Fred J. Gray, Jr. died suddenly. This was the end of the mortal man, but the kindness and goodness created by him, will endure beyond our lifetime.

He graduated from Vanderbilt School of Medicine in December, 1943. He served with the Army Medical Corp and started his training in Thoracic Surgery in 1946. He was certified by the American Board of Surgery in 1950 and received certificate No. 92 from the American Board of Thoracic Surgery in 1952.

He began his practice in Little Rock in August, 1951. It was largely through his efforts that surgical therapy was instituted at the State Sanatorium. The first successful pulmonary resection done at the Sanatorium was by Fred in October, 1954.

He was a member of the A.M.A., A.C.S., the American Trudeau Society serving as president of the Arkansas Chapter, the Southern Thoracic Association, Arkansas State Medical Society, and Pulaski County Medical Society.

This man was a man of God as evidenced by his family, his Christian attitude to all, and by the long hours in the service of his church, as both teacher and elder.

He was an active sportsman and lived each day with enthusiasm and vigor.

When a good man dies, a little of each one of us dies with him. He has shown us the way a man should live and may we all try to live up to his ideals.

Be it therefore resolved that this Society extend to his wife, Lavonna, his son Fred III, his daughters, Lavonna Ann and Barry, and the other members of his family our deepest sympathy; and a copy of this resolution be made a part of the minutes of the Society, a copy to be sent to Arkansas Medical Journal and a copy to be sent to his family.

Grimsley Graham, M. D.

Joe Calhoun, M. D.

Joe Norton, M. D.

Adopted June 3, 1958.



## Drug Resistant Staphylococcal Infections

ALFRED KAHN, JR., M.D.

Medicine has gone through many evolutionary periods. Each era gave the profession valuable contributions of knowledge. We have passed through a phase where anatomy was the dominant underlying theme, then came a period of intensive research in bacteriology and pathology, and now we are in a time when chemistry as applied to medicine is the major field of research.

Occasionally, the lessons learned in a past era are forgotten due to technological advances that seem to make a procedure valueless. Chemotherapy and antibiotic drugs have, so to speak, pushed us back from asepsis to antiseptis. Before the "wonder drugs" a break in aseptic technique in an important medical or surgical procedure was considered almost a violation of trust that might easily result in a fatality, especially in the very young and the very old. With the advent of new chemotherapeutic agents in the 1930's and newer antibiotics in the 1940's, an increasing disregard of aseptic technique was shown. Many physicians felt that prophylactic antibiotic therapy could prevent infections although this has been repeatedly shown to be false. Further, it was felt that if infection did start, antibiotics could overcome it.

The latter contention is also erroneous as the antibiotic spectrum never was completely effective against certain bacteria, and in recent months it is becoming more and more evident that in at least one instance a common germ is getting very resistant to antibiotics; it is staphylococcus aureus. There are many reports in the literature concerning the resistance of this bacteria to antibiotics. In the *Journal of Diseases of Children*, there is reported an epidemic due to staphylococcus in very young children (The Role of a Chronic Carrier in an Epidemic of Staphylococcal Disease in a Newborn Nursery, R. T. Smith, M. D., Vol. 95, page 461, May, 1958). This was traced oddly enough to one infected adult carrier. Seldom does an epidemic stem from one person, usually there are multiple carriers.

Recently in St. Vincent's Infirmary of Little Rock, a survey of hemolytic staphylococcus aureus was made by Sister Charles Adele and Drs. Kilbury and Orr. One hundred nasal swabs were taken on physicians and hospital personnel. Eighty-three percent had hemolytic staphylococcus aureus present and of this group 22 percent were coagulase positive, the usual test for human virulence. Eight cases of the later group were antibiotic resistant. It is of great interest, of 36 persons in the nursery and delivery rooms, 6 had antibiotic resistant hemolytic staphylococcus aureus. In a further study including student nurses, 97 percent were carriers of hemolytic staphylococcus aureus of which 7 percent were antibiotic resistant. One interesting trend which is totally without adequate statistical verification in this study is that the freshman student nurses seem to be greater carriers of penicillin resistant staphylococcus aureus than senior student nurses. Does contact with this germ tend to build up immunity in selected individuals?

The *New England Journal of Medicine*, Vol. 258, page 919, May 8, 1958, has an excellent review of 21 cases of staphylococcal pneumonia. Fourteen of these cases died. A mortality rate of more than 60 percent is a very frightening figure.

The mechanism of antibiotic action on bacteria has been reviewed for this journal by Dr. K. C. Blanchard of Johns Hopkins University (*Journal of the Arkansas Medical Society*, Vol. 50, page 134, January, 1954). In this review, Blanchard has discussed particularly the mode of action of drugs on staphylococcus aureus. The nature of penicillin inhibition is due to interference with the synthesis of ribose nucleic acid by penicillin and this in turn interferes with certain chain reactions needed for the synthesis of various essential intracellular substances. Now the staphylococcus in many instances is not biochemically upset by penicillin and other antibiotics thus leaving

only the body's natural resistance to overcome infection.

In view of this it is important for hospitals to re-emphasize to their staffs the necessity for strict aseptic technique and the avoidance of bacterial contamination of patients through dusts, blankets, faulty air conditioning, etc.

A return to the era of asepsis may save many lives.

### **Robins Elected to the Board of Trustees**

At the Annual Convention in San Francisco June 26th Dr. R. B. Robins, of Camden, was elected to the Board of Trustees of The American Medical Association on the first ballot.

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## **Medicine in the News**

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### **New Forrest City Hospital**

The Forrest Memorial Hospital, an ultra-modern 82 bed general hospital located at Forrest City, Ark., held open house Sunday, June 15th. The admission of patients began Monday, June 16th. Dr. Austin F. Barr has been selected first Chief of Staff; Dr. A. M. Bradley, vice chief; and Dr. R. A. Cuonzo, secretary.

### **Second Conference On Uniform Labeling Law**

CHICAGO — The second in a series of conferences to discuss model legislation for labeling hazardous substances was held Friday, July 25, at the American Medical Association's Chicago headquarters.

Sponsored by A.M.A.'s Committee on Toxicology, invitations have been sent to more than 60 organizations representing trade associations, toxicity-testing laboratories, chemical trade unions, and other interested groups.

### **Subcommittee Recommends Mortgage Guarantees For Nursing Homes**

A subcommittee of the Senate Banking and Currency Committee, under chairmanship of Senator John J. Sparkman

(D., Ala.), has recommended to the full committee that the Federal Government guarantee loans for proprietary nursing homes and other facilities for the aged. The program would be handled by Federal Housing Administration.

The action is in line with recommendations of the American Medical Association, presented in testimony by Dr. R. B. Robins.

### **Forand Bill Scheduled for Hearings**

Hearings on the Forand bill and other proposed amendments to the Social Security program was held June 16-27 before the House Ways and Means Committee. Announcement that Congress would reopen the Social Security act came late May 29, climaxing weeks of uncertainty when it was not known whether the hearings would be held this session, or when they would start if scheduled. The Forand bill, by far the most important medical issue in the hearings, would amend the Social Security act to provide for surgery and 120 days of hospital and nursing home care annually for social security recipients, to be financed by increased OASDI payroll taxes.

Major changes proposed in the Forand bill are:

I. Give the 13 million persons now eligible for OASI benefits (and others to follow them) free surgery and hospital-nursing home care for 120 days a year.

II. Raise the OASI payroll taxes by one-half per cent for employer and employee and three-quarters of one per cent for self-employed and raise the wage base to be taxed from the first \$4,200 of income to \$6,000.

III. Increase dollar benefits for all beneficiaries.

Washington D. C. — After five months of almost no action whatever on health-medical bills, Congress turned toward them late in the session, with the result that quite a number may be passed before the expected mid-August adjournment.

Most important, the House Ways and Means Committee held two weeks of hearings on the Forand bill and other social security issues. The Forand bill is a highly controversial piece of legislation



that first came before Congress in another form six years ago but on which no action has been taken. The bill, strongly opposed by the American Medical Association and most other professional groups, would offer up to 120 days a year of hospital-nursing home care plus surgical services to social security beneficiaries.

Critics of the Forand bill list among their principal objections that the age line couldn't be held once the program were set up, and that the result eventually be total national compulsory health insurance.

There was no indication from the committee whether it really was serious about the Forand bill or was admitting testimony on it merely because there was no easy way to stop such testimony once it was decided to open up the social security program. There was evidence that the committee probably would give priority to increases in public assistance payments, in view of the unusually large numbers of unemployed.

#### **Union Medical Plan Problems Discussed at Health Conference**

The United Miner Workers Welfare and Retirement Fund has announced that it is closing the door on free choice of physicians in its big hospital and medical care program. Dr. Warren F. Draper, fund medical director, told the National Conference on Labor Health Services that the fund ". . . will never return to free choice of physicians. In order to continue to provide its present liberal medical and hospital benefits, the trust fund will deal only with those physicians and hospitals which it considers necessary and essential. . . . It is the right of all labor health services to control their own medical care programs and they must insist on this right if the cost of medical care for their people is to be kept within reasonable bounds."

On the second day of the conference, called by the American Labor Health Association, Dr. F. J. L. Blasingame, AMA general manager, declared in a statement that the AMA has tried repeatedly over a long period to establish harmonious relationships between doctors and third parties which would result in the highest quality of medical care. "As

things stand today, there is no question but what the medical interests of the miner and his family have been subordinated to the financial interests of the fund," Dr. Blasingame said.

#### **Social Security Reserve to Drop; System called 'In Balance'**

Although in the next five years the social security system will pay out more in benefits than it takes in in taxes and interest, looked at long-range the system is "in approximate balance for all practical purposes." These are among the findings and conclusions in the annual report to Congress of the Old-Age and Survivors Insurance Trust Fund.

However, the disability trust fund, established as a separate account when the disability insurance law was passed in 1956, is expected to increase steadily until it reaches about \$4 billion in 1962. Disability benefits are estimated at \$175 million for the current fiscal year, \$247 million next year and \$317 million the following year.

Some of the points in the OASI report:

1. Because benefits are increasing more than expected, the OASI trust fund is due to decline from about \$22.6 billion to between \$19 and \$20 billion by 1962. However, the report says the dip in reserves may be attributed to "temporary factors which have virtually no bearing on the financial condition of the social security system over the long-term future."

2. The fund is expected to take an upward trend after scheduled tax increases go into effect in 1965, and to "continue to grow for many years thereafter."

3. In the opinion of the trustees, there is "ample time to make any adjustments which might be needed," in the light of further experience or future estimates. The trustees are Secretaries Anderson (Treasurer), Mitchell (Labor), and Folsom (HEW). Social Security Commissioner Schottland is secretary of the board of trustees.

During the current fiscal year, ending June 30, OASI benefits are expected to rise to \$7.8 billion, resulting in a \$428 million drop in the trust fund, the first year's decline in the fund since it was

*(Continued on Page 134)*





## Arkansas Breakfast for AMA ○

The campaign to elect Dr. R. B. Robins of Camden, Arkansas, to the nine-member board of trustees of the American Medical Association reached its high point in the "Arkansas Breakfast" held in the Sheraton-Palace Hotel, San Francisco, on June 23rd. The 240 guests were members of the House of Delegates and Board of Trustees of AMA, Officers of AMA, and members of the Arkansas Medical Society and their guests. The campaign and the breakfast were financed by individual contributions of interested members of the Arkansas Medical Society. Dr. Robins was elected to the high post on Thursday, June 26th, bringing honor and great prestige to Arkansas. He will complete the unexpired term of Dr. F. J. L. Blasingame of Texas, who has accepted the position of Executive Vice President of AMA. The term expires in June of 1959 when Dr. Robins will stand for re-election to continue as a trustee.





## se of Delegates, San Francisco

Among those in the photograph, from Arkansas are:

Dr. Euclid Smith, Hot Springs; Dr. Gordon Oates, Little Rock; Dr. Joseph Norton, Little Rock; Mrs. James M. Kolb, Clarksville; Mr. Jim Kolb and wife Mary of Clarksville; Dr. L. H. McDaniel of Tyronza; Mr. Paul Schaefer, Fort Smith; Dr. James Kolb, Clarksville; Dr. Fount Richardson, Fayetteville; Mrs. Gordon P. Oates, Little Rock; Dr. Louis K. Hundley, Pine Bluff; Mrs. Mason G. Lawson, Little Rock; Congressman Oren Harris, El Dorado; Mrs. A. A. Blair, Fort Smith; Dr. Perry J. Dalton, Camden; Dr. Sam Jameson, El Dorado, Dr. R. B. Robins, Camden; Dr. and Mrs. D. W. Goldstein, Fort Smith. Among officers of the American Medical Association shown are: Dr. Dwight Murray, past president; Dr. F. J. L. Blasingame, Executive Vice President; Dr. Gunnar Gundersen, president-elect; Dr. David B. Allman, president; Dr. E. S. Hamilton, Chairman of Board of Trustees; Dr. J. J. Moore, Treasurer; Dr. Ernest B. Howard, assistant general manager; and Dr. George F. Lull, secretary.



# MEDICINE IN THE NEWS (Continued)

set up in 1940. The next year's drop is estimated at \$1.1 billion.

Three reasons are cited for the unexpected OASI expenditures:

**First** and most important, more benefit claims than anticipated were filed by persons brought under coverage in the last four years.

**Second**, more women than expected have elected to take a reduced benefit at age 62, rather than waiting until age 65 for the full benefit. (In the long run this will average out at no extra cost.)

**Third**, during the recession some older workers find it more difficult to keep or find a job, so retire earlier than they had planned. The recession also reduces tax contributions.

## NIH Grants for May Exceed \$2 Million

National Institutes of Health estimates that for May its research grants and fellowships amounted to \$2,229,489. Over 75 per cent of the total went for support of 120 research projects concerned with major diseases and various basic problems in the medical and biological sciences. About 40 per cent of the research money is for projects in mental health. Grants were made to 77 institutions in 28 states, the District, Puerto Rico and three foreign countries. In this country, 77 institutions in 28 states benefited.

## IRS Rulings of Interest To the Profession

The Internal Revenue Service has ruled that physicians on a full-time staff basis with hospitals do not have to include in their gross income those checks they receive from patients and which are immediately endorsed over to the hospital. Comments IRS: "He is an agent for the hospital, merely acting as a conduit for the fees collected. "Doctors are expected, however, to list when filing their returns, the sources of the fees, the amounts received and disposition made. In another ruling, IRS holds that expenses paid for special aids to assist in the education of a child progressively becoming blind are deductible as expenses paid for medi-

cal care. Listed were such things as tape recorder, special typewriter, projection lamp for enlargements and special lenses.

## Forand Bill Comes Up First Day Of Social Security Hearings

Hearings are moving ahead on schedule before the House Ways and Means Committee on the whole social security program, with emphasis on generally increased benefits. The Forand proposal, for surgery and hospital-nursing home care for social security beneficiaries came up the opening day and was referred to several times during the week, although most witnesses did not touch on the subject. This plan, favored by labor leaders, most welfare organizations and a number of congressmen, is opposed by the American Medical Association and other professional groups.

The parade of witnesses called specifically and generally for: allowing use of the vendor payment system for public assistance medical payments within the ceiling and increased payments; vastly increased authorizations and appropriations for child health, crippled children and child welfare services; more federal money for the four public assistance categories; increases in old-age insurance payments with accompanying tax increases and increases in amount of income to be taxed; an easing of the definition of disability and lowering or elimination of the age 50 cut off; and federal contributions to "general assistance" welfare case, which U. S. does not now assist.

**Secretary Folsom**, replying to questions by **Rep. Aime J. Forand** (D., R.I.), said he and the administration were opposed to the hospitalization idea, and also to an "optional" plan for OASI hospitalization. He suggested that if the committee was interested in the Forand plan, it at least wait until completion next January of a study of social security now under way. Explaining that progress already was being made in solving the health problems of the aged, Mr. Folsom cited statistics to show the rapid expansion of health insurance in this group, the interest of some employers in buying insurance for their retired workers, and improvement in nursing homes, rehabilitation and facilities for the chronically ill,



all of which point to reduced medical care costs for the aged. Also opposed to the Forand principle was **Ira O. Wallace**, president of the American Nursing Home Association. Speaking for the American Hospital Association, **Dr. Martin Steinberg** urged a doubling of federal public assistance medical payments for children and a tripling of payments for adults, based on estimated monthly costs of \$6 and \$18 respectively.

A leading exponent of the Forand proposal was **Senator William Proxmire** (D., Wis.), who has his own bill for a major liberalization of social security, including establishment of a similar hospitalization-surgical program. **Rep. John W. Byrne** (R., Wis.), reminded the senator that his plan would mean an additional tax of \$168 for those earning \$7,500 in salary and a \$252 increase for the self-employed.

**Rep. Charles O. Porter** (D., Ore.) strongly indorsed the Forand bill, while stating that some of his "friendly critics" among doctors have told him the bill is socialized medicine, "that old horror."

### Major Increase in Medical Spending Proposed by Senate Committee

The Senate Appropriations Committee took a broad look at U. S. spending in the medical and health fields and decided that the present rate wasn't high enough. Accordingly, the overall HEW budget for the next fiscal year would be increased by 10 per cent (\$2,796,000,000) over what the House voted earlier this session. Some individual items were hiked nearly a 100 per cent over the House figures, and in at least two instances, the committee proposed new spending in areas not touched by the House.

The two areas are \$6,950,000 for the long-awaited new home for the National Library of Medicine to be built at Bethesda, and \$9,625,000 for a general office building for the National Institutes of Health.

Hill-Burton program would get a whopping \$211,200,000, enough for 31,800 beds in hospitals, nursing homes and chronic disease facilities and for diagnostic and treatment centers and rehabilita-

tion facilities. The House voted \$121,200,000.

The National Institutes of Health would benefit by some \$100 million more than voted by the House or an increase of over 45 per cent. Each of the seven institutes would receive added funds. In addition, the committee proposed that the House ceiling of 15 per cent for allowable overhead costs for any one research grant be stricken. It also recommended nearly a 100 per cent increase in general research funds, including more research in the basic sciences.

Training grant funds would rise, too, if the committee proposals are followed by the Senate. For public health worker training, it set a total of \$5 million, an increase of \$2.8 million, and for graduate nurse training, the total would be \$7 million, an increase of \$4 million. For Indian health activities, PHS would receive an additional \$4,775,000 for a total of \$45 million.

### AMA on VA Service-Connected Presumption

The American Medical Association has informed the House Veterans Affairs Committee that it remains opposed to the determination of service-connection of diseases and disabilities by legislative enactment. Such a question can only be answered on the basis of the facts of the individual case, Dr. F. J. L. Blasingame, AMA general manager, informed the group in a letter June 18. "There are many factors which must be determined and weighed on the basis of the actual case history of the individual before service-connected can be accurately determined," he stated.

### Defense Officials Defend Medicare, But Propose Limitations

The Medicare situation is approaching a decision. Last week the House passed the Defense appropriations bill, but with the Medicare appropriation cut about \$12 million to \$60 million and Defense Department under orders to spend no more than that on civilian care. At the same time House leaders agreed to give sympathetic consideration to any Senate amendments that would remove dollar limita-

tions on Medicare. According to Defense officials, the bill's \$60 million ceiling would result in "destruction" of the program. The decision now is up to the Senate Appropriations Committee. Testifying before the committee this week were spokesmen for the Defense Department.

### **House Relents on Medicare Restrictions; Issue now Up to Senate**

Agreement of House leaders to work out in Senate-House conference an arrangement to "make everyone reasonably well satisfied" cleared the way this week for House passage of the Medicare appropriation, a controversial section of the Defense Department's appropriations bill. The bill, still containing destructive restrictions on civilian Medicare, has gone to the Senate, but with the pledge of key House committeemen that when it comes back for conference they would adopt any necessary changes agreed to by the Senate.

In the mistaken belief that care in military medical facilities is far less expensive than in civilian and that Medicare was costing more than anticipated, the subcommittee had cut Medicare civilian funds from a requested \$71.9 million to \$60 million, and had instructed the Defense Department that it could spend no more than that amount on the program in the fiscal year starting July 1. To "save" the \$12 million, more dependents would have to be sent to military hospitals, which already care for 60 per cent of them. These restrictions, would wipe out civilian Medicare in all areas near military medical installations, and, in the opinion of Medicare officials, require a complete change in the operating concept of the program, including renegotiation or cancellation of contracts.

### **Senate Committee Considers Nursing Home Financing; House Unit Acts**

The Senate Banking and Currency Committee is about to break new ground in the field of care for the aged. It is considering a draft bill with a provision making proprietary nursing homes eligible for the first time for FHA mortgage insurance. As now drawn, the loan guarantee

would cover 75 per cent of a construction or rehabilitation loan with interest not to exceed 4 1-2 per cent. This type of loan to stimulate construction of more nursing homes was first proposed by the American Association of Nursing Homes and the American Medical Association.

### **Poll on Social Security Medical Care**

Rep. Harold L. Collier (R., Ill.) who comes from Chicago has polled his constituents on such things as financing medical care for all those under social security. He reports this response: 73 per cent were opposed, 26 per cent were in favor and only 1 per cent had no opinion. The Forand bill provides hospitalization and surgical services for all persons eligible for social security payments and for their dependents. On the question of should mandatory social security be expanded, the response was 47 per cent yes, 48 per cent no and 5 per cent no opinion.

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## **ANNOUNCEMENTS**

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### **OB-GYM MEETING**

A meeting of District VII, American College of Obstetricians and Gynecologists is to be held September 12 and 13, 1958, at the King Edward Hotel, Jackson, Mississippi.

### **American Board of Obstetrics And Gynecology**

Applications for certification (American Board of Obstetrics and Gynecology), new and reopened, Part I, and requests for re-examination Part II, are now being accepted. Deadline date for receipt of all such applications is September 1, 1958. No applications can be accepted after that time.

### **International College of Surgeons To Hold Postgraduate Course**

In response to requests, the United States Section of the International College of Surgeons has arranged with the faculty of the Cook County Graduate School of Medicine, Chicago, for the pres-



entation of a postgraduate course this year.

It will be given October 13-25. The course will be conducted under the supervision of the attending staff of Cook County Hospital, Chicago.

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## Obituary

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Dr. Arthur Fowler, 77, a pioneer Humphrey physician and community leader for more than 50 years died Monday, June 9, 1958. Dr. Fowler was born at Cabot, Ark. He was a graduate of Hendrix College and the Arkansas School of Medicine. Dr. Fowler was a former mayor of Humphrey and was active in school board work. He was a Master Mason and was a trustee of the Humphrey Methodist Church and a member of its board of stewards for more than 40 years. He was a member of the Jefferson County Medical Society, the Arkansas Medical Society and the American Medical Association. Survivors include his wife, Mrs. Kathaleen Dobbins Fowler; two sons, Dr. Arthur Fowler, Jr., Pine Bluff, and Dr. Horace D. Fowler, North Little Rock; one daughter, Mrs. Frank Brummett, Stuttgart; two sisters and one granddaughter.

Dr. George Gideon Woods, 80, of Huntington, a physician for over half a century, died June 8, 1958, after a short illness. Dr. Woods, a University of Arkansas graduate, practiced at the Woods clinic with his son. Survivors include his wife, Sara Alice; one son, Dr. William Merle Woods of Huntington; one daughter, Mrs. Natalie Phillips of Fort Smith; and two sisters.

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## PERSONALS AND NEWS ITEMS

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The entire Stephens community turned out recently to express appreciation to **Dr. W. B. Ellis**. The affair was a surprise birthday and appreciation party for him. He was presented with an outboard motor and two lovely chairs for his home.

**Dr. Damon Martin**, formerly of Adona, has moved to Danville to practice medicine in partnership with **Dr. W. P. Harris**. Dr. Martin interned at the University of Arkansas Medical Center and has practiced during the past year at Salem.

The University of Arkansas and its Alumni Association cited three graduates of the University at the annual spring commencement. The award, the highest honor the University and its Alumni Association can pay to an alumnus of the institution, went to: **Edward Boyd**, judge of the 55th Judicial District at Harris County, Tex.; **Dr. John F. Oakley**, prominent New Orleans, La., surgeon, and **Dr. Charles R. Henry**, one of Little Rock's leading physicians.

**Dr. Fred B. Berry**, a general surgeon in Benton the past year, has begun a two year residency in heart and lung surgery at the University of Michigan.

A Little Rock physician, **Dr. L. D. Reagan**, was awarded a pin from the Ark. Med. Soc. in recognition of 50 years of medical practice. Dr. Reagan, who is 77 years old, attended Ouachita College and is a graduate of the University of Arkansas School of Medicine. He interned at St. Vincent's Infirmary where he has been a member of the medical staff for 50 years. For more than 20 years he was physician for the Rock Island Railroad.

**Dr. R. V. Ebert** presided over a National Conference on Research in Emphysema sponsored by the Colorado Tuberculosis Association and its affiliate societies in Aspen, Colorado June 13-15, 1958. There were 130 scientists and physicians in attendance. A highlight of the

program was the critical analysis of the conference proceedings presented by Dr. Ebert. This analysis included suggestions for the course of future research.

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## Proceedings of Societies

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The First District Medical Society of Northeast Arkansas had their 111th Semi-Annual meeting at Harrisburg on May 29th. The program was as follows: "Surgery Cardiovascular System," Dr. Joseph A. Buchman; "Staphylococcal Infections," Dr. Daniel H. Autry; "Evaluation of Head Injuries," Dr. Robert Watson, all of Little Rock. Medical Legislation was discussed by Dr. Elvin Shuffield, chairman of the Legislative Committee and Mr. Eugene R. Warren, attorney for the Arkansas Medical Society. Drs. Joe Verser and A. J. Forrester and their wives were hosts at the social hour and barbecue held in the evening at Ridgeview, the new home of Dr. and Mrs. Verser.

The Fifth Councilor District Medical Society and the Auxiliary held a dinner meeting at the Frank Martel Lodge in Magnolia May 21. The district is comprised of Columbia and adjoining counties and Dr. Evan Houston is president. Dr. W. R. Matthews of Shreveport spoke on "The Changing Spectrum of Thyroid Pathology."

The Jackson County Medical Society held its regular monthly meeting May 29 at the Newport Country Club. The dinner meeting was followed by a science life program on "Cancer Paste." Dr. T. E. Williams and Dr. J. D. Ashley spoke on "Treatment of Skin Cancer with Chemo Surgery."

### Contributors to the American Medical Education Foundation From the State of Arkansas, May 1958:

Mrs. W. J. Bruce, Pine Bluff	-----\$ 5.00
Mrs. R. M. Logue, Little Rock	5.00
Mrs. P. J. Sheppard, Little Rock	-- 5.00
	<hr/> \$15.00

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## Woman's Auxiliary

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The Woman's Auxiliary to the Pulaski County Medical Society held its May meeting in the Junior League House in Little Rock. Hostesses for the day were Mrs. Harvey Shipp, chairman; Mrs. Clyde D. Rodgers, Mrs. James Headstream, Mrs. John Hundley and Mrs. Paul Hoover. The meeting was called to order by Mrs. William G. Cooper, Jr., president. Following reports from various committee chairmen, Mrs. Mason Lawson installed new officers. The president for 1958-59 will be Mrs. Robert Watson. Serving with her will be Mrs. Frank Padberg, president-elect; Mrs. William G. Cooper, Jr., 1st vice president; Mrs. M. J. Kilbury, Jr., 2nd vice president; Mrs. Howard Armstrong, recording secretary; Mrs. John Baber, treasurer; Mrs. Woodbridge E. Morris, corresponding secretary; Mrs. Masauki Hara, historian; Mrs. James Newbill publicity secretary and Mrs. Hoyt Choate, parliamentarian.

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## BOOK REVIEWS

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**INTRODUCTION TO ANAESTHESIA.** The Principles of Safe Practice; Robert D. Dripps, M.D., Professor and Chairman, Department of Anesthesiology, Schools of Medicine, University of Pennsylvania, Philadelphia; and James E. Eckenhoff, M.D., Professor of Anesthesiology, Schools of Medicine, University of Pennsylvania, Philadelphia, and Leroy D. Vandam, M.D., Clinical Professor of Anesthesia, Harvard Medical School, Boston; Pp. 226, Illustrated; 1957; W. B. Saunders Company, Philadelphia.

A guide in anaesthesia is presented, useful to the intern and resident, who is on the anaesthetic service. As this textbook is to be used in conjunction with the word-of-mouth teaching on the actual case, it can serve as a quick reference and is a concise treatise, without undue discussion of extraneous material.

The book will be of value in keeping up-to-date the practicing anaesthesiologist. It presents a complete source of help in the many maneuvers and conditions that anaesthetists are called on to do, from emergencies in the new born in the delivery room to the precautions to remember in anaesthesia of the aged.



## FEATURES

An excellent book for the hospital library, it is well indexed for ease of reference. It is more than an "Introduction," it is a valuable compendium.

—F.R.

**DIABETES AS A WAY OF LIFE.** T. S. Danowski, M.D. Coward-McCann, Inc. New York, 1957. \$3.50.

This small handbook is written expressly for the diabetic patient. It is well written and authoritative. Any person with a chronic disease should be educated about their ailment. This book attempts to explain diabetes, its cause, and method of treatment to a diabetic. Dr. Danowski has written a book which is readable and contains a good deal of scientific information. The patient who is unwilling to read the more intricate parts of the book can still get a vast amount of information from reading the part that interests him and omitting some of the technical aspects. This book is heartily recommended.—A.K.

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### Letters to the Editor

June 2, 1958

Dr. Alfred Kahn  
6th and Pulaski Streets  
Little Rock, Arkansas

Dear Dr. Kahn:

As per our telephone conversation, I am enclosing a copy of the legal opinion given our board by Mr. J. I. Teague, Board attorney, in regard to membership of non-nurses in the American Registry of Doctor's Nurses.

The American Registry of Doctor's Nurses, P. O. Box 68, Marianna, Florida, has circulated folders to Arkansas doctors inviting their office assistants to become members of this organization if they have worked in a doctor's office for 6 months. For the registration fee they receive membership and a pin shaped like a caduceus and bearing the initials RDN.

The Practice Act of Arkansas would prevent wearing of this insignia by any others than Registered Nurses or Licensed Practical Nurses. Anyone other than those wearing the pin would be violating the law and subject to prosecution by the State.

Because these pamphlets are being circulated to physicians all over the state perhaps the best way to advise the doctor and his nurse about this

is through your publication. We are sure a physician would not want to let his office assistant violate a law knowingly.

We appreciate your cooperation on this matter of importance to both nurses and physicians.

Sincerely,

Rachel Allen  
Administrative Secretary

26 May, 1958

From: James I. Teague

To: Mrs. Rachel Allen, Administrative Secretary  
Arkansas State Board of Nurse Examiners

Herewith is the material sent to me by you under date of May 26, containing an application for membership in the American Registry of Doctor's Nurses.

It is my opinion that it would be a violation of the Arkansas Nurse Practice Act for any person who is not either a registered nurse or a licensed practical nurse to use the designation "RDN", either on a uniform or on a pin worn on a uniform, since the same would indicate to any patient that the wearer had status as a nurse, and, in fact, the name itself includes the term "nurse."

I do not think it would be illegal for either a registered nurse or a licensed practical nurse to join the organization, but they would probably prefer their own letter designations, since it would seem to me to have much more significance than an unknown designation like "RDN".

J. I. Teague

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### ANSWER: "What Is Your Diagnosis?"

LAB DATA: No lab work available

X-RAY FEATURES: Polypoid mass  
2 cm greater curvature

SURGERY: Subtotal gastrectomy

PATHOLOGY: Leiomyosarcoma

DIAGNOSIS: Stomach Leiomyosarcoma

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# TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

## Some New Frontiers in Adult Health—1956

Jonas N. Muller, M.D., *New York State Journal of Medicine*, February 15, 1958.

A frontier may be defined as a border between opposites — between the known and the unknown. As the unknown becomes known, new frontiers become apparent. Progress in social and biologic sciences has made it possible for public health to identify some new frontiers.

The fundamental knowledge which made a vaccine against paralytic poliomyelitis possible also makes possible the identification of viruses which play a part in causing acute respiratory infections. This group of infections, usually lumped together under the title of "a cold," is not often considered as a public health problem. But the common respiratory infections are the leading causes of job and school absenteeism, responsible for tremendous losses in productivity; are in each age group the most frequent cause of illness, and are serious obstacles to personal and community well-being.

Not only is the community as a whole directly affected by "colds" but it is clear that achievement of control requires organized community effort. Community support will be required to continue the search for new knowledge and to apply knowledge now available. For example, experimental vaccines against viruses of the respiratory group are being developed and tested with indications of future success. Our understanding and ability to control the serious effects of the many diseases caused by the viruses — measles, mumps, chicken pox, and, more recently, infectious hepatitis — is being advanced likewise.

Our successes in the control of many acute communicable diseases and our increasing concern with noninfectious disease have tended to divert both public and professional attention from other persistent problems of infectious disease. Yet

● New knowledge of respiratory infections has made the goal of controlling them a possibility. Community understanding and effort are needed if the prevention of both infectious and non-infectious illnesses is to be effected.

some new frontiers in relation to such old problems might be indicated. There is the need for a new emphasis on common infectious diseases *especially* in the light of a well-justified concern over long-term illness. Current thinking about the causes of chronic disease and disability, and ultimately of death, has begun to theorize about a casual relationship between the so-called minor illnesses, most of them infectious, and the occurrence of long-term illness and final fatal illness. New clues to the control of disease and disability undoubtedly will be found in studies of man's susceptibility to disease.

This chain of thought leads away from infectious disease, but let us return for a moment to one in particular. New knowledge of this disease has brought the realization that the goal of eradication accepted as valid by many in the past may well have been illusory; that a goal of control is still to be achieved. However, control seems more possible for the future than hindsight tells us it might have been in the past — if we can apply the knowledge we already have.

In 1955 this disease killed 15,000 men and women in the United States and an estimated 250,000 were ill with it. In New York City alone there 1,000 deaths, a total of over 12,000 known cases and an estimated 10,000 persons who did not, and probably do not, know they have this disease. I am speaking of tuberculosis. The dramatic fall in mortality from tuberculosis, beginning in 1947 and greatly accelerating the downward trend already evident, created a false sense of security. The number of newly reported cases has not fallen at the same rate. Adults are still evidencing their infection by the presence of active tuberculosis with tubercle bacilli in their sputum, or by the presence of tuberculosis in their children. Eighteen of every 1,000 youngsters in a group of pre-





when psychic  
symptoms  
distort the picture

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**SEARLE**

\*A Symposium on the Pharmacologic Effects of Dartal on the Liver, Chicago, Searle Research Laboratories, Feb. 7, 1958.

school children seen in New York City Child Health Station in 1955 showed positive skin tests for tuberculosis—evidence, in children, usually not only of recent infection but of an open, active case of tuberculosis in some adult in the child's immediate environment.

This is despite the fact that most patients with tuberculosis can now be rendered noninfectious and that the disease in the patient can be brought under control more readily, since the advent of the antimicrobial drugs. Recent evidence from animal and human experiments suggests that the disease can even be prevented in individuals exposed to a high risk of infection through the prophylactic use of one of these drugs. But the application of these measures of individual treatment and control requires that the presence of the disease be known and that patient be willing to accept treatment.

We must intensify our efforts to find cases by concentrating on the population groups most likely to harbor tuberculosis. We still have to learn how to reach these groups successfully so that they will make use of the available case-finding services. We also have to learn how to help people accept treatment. Social scientists are working together with other public health people to achieve these ends. Ways are being found to inform and move to action the varied ethnic and cultural groups which make up city populations.

The most difficult group to move to action—at least in terms of one's reasonable expectations — may come as a surprise. Tuberculosis may be found many times more often among people who are entering general hospitals than in the population at large. Therefore, a simple, effective, and economic case-finding device is a rou-

tine chest X-ray for all general hospital admissions. As of the beginning of 1956, less than one half of the general hospitals in New York City had instituted such a procedure.

Nevertheless, it is estimated that about one million New Yorkers have their chests X-rayed each year by their own physicians, by union or employer health programs, by health department clinics, by hospitals, and by the mass X-ray survey teams.

The frontier is the effective control of tuberculosis. To reach it, all the knowledge of the past, concerning the relationship between poor housing and over-crowding, malnutrition, and oppressive conditions of work, all concomitants of a low standard of living, and the incidence of tuberculosis, must continue to be applied, together with our newer knowledge concerning the biologic aspects of tuberculosis control.

It is of special interest in talking of the new frontiers of public health as they affect our adult population to recall that tuberculosis was displaced as the leading cause of death in the United States less than fifty years ago, in 1910, when coronary heart disease as we know it today, rose to occupy this position. It has continued to occupy this post of dubious distinction ever since and will probably occupy it for some years to come.

There are many other areas along the frontiers of public health—the prevention of coronary heart disease, the indications for the use of drugs known as tranquillizers in mental disease, the public health significance of our aging population, may be mentioned as examples. They suggest some of the important adult health responsibilities in our communities. We have helped some people to live longer—we must strive to make that life healthful and satisfying.



## Precautions in Medical Radiology

RAYMOND R. LANIER, PH.D., M.D.\*

From the beginning of time, human existence has been a matter of enduring various risks. Ancient chances of our destruction, as by wild beasts or famine or plague, have been, in our technical civilization, largely dispelled and are now replaced by the risks of high-speed transportation, increasing air pollution, TV hypostasis, etc. Although modern-day risks seem less terrifying than the old-fashioned ones (except in the case of nuclear warfare) some of them deserve serious attention. Our particular subject today, the hazards in medical radiology, is not necessarily the most important danger we face, nevertheless the widespread use of X-rays and other radiations in modern medicine makes it necessary for us to recognize and evaluate the possible hazards and do all that we can to minimize them.

The revolutionary advantages for the patient and the physician have been appreciated from the very day of Roentgen's discovery of X-rays in 1895, and have helped immeasurably in the relief of human suffering ever since. The medical applications of radiations are still expanding rapidly, particularly with radioisotopes as tracers in biochemical and physiological processes. It is safe to assert that modern medicine could not survive at its present levels without its aids from the science of radiology.

The dangers of radiation have been recognized to some degree almost as long as the benefits. However, an appreciation of small dose effects has developed

with almost glacial slowness, and even now cannot be assessed accurately.

Large exposure effects such as skin "burns"; alopecia; nausea, vomiting and diarrhea; hemorrhage and anemia; and radiation-induced cancer developing in sites of chronic injury led first to national committees, then to international commissions on doses and hazards and protective measures. The first international commission met in 1928(1). The work of these commissions, made up of physicists, statisticians, biologists, and pathologists, as well as radiologists, has been that of integrating data on radiobiological effects into standards recommended for safe practices. The "safe" values set from time to time have been revised as new information was received, and even today the levels are subject to change. The spectacular safety with which the birth of the atomic age has been accomplished is largely due to the good work of these successive commissions. However, the record of the recommended limits at various times is enlightening (Table I) as it shows

TABLE I  
OCCUPATIONAL RADIATION LIMIT TO  
TOTAL BODY FROM EXTERNAL  
RADIATION SOURCES

Year	OPL* (r/year)
1902	2500
1925	100
1931	50
1936	25
1948	15
1956	5

From an article by Jack Schubert and Ralph E. Lapp published in Bulletin of the Atomic Scientists, volume XIV, number 1, January 1958, pages 23-26.

\*Occupational Permissible Limit

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Presented at the Annual Meeting of the Arkansas Medical Society in Hot Springs, Arkansas, on May 5, 1958.

how increasing knowledge has resulted always in greater caution. Once established, there has never been an increase in the permissible level as the result of new facts. In view of this history, all of us should clearly recognize with the members of the commissions that the values set at any time are only the best possible "educated guess" (Hodges, 1953 (2)) and that the guess will be likely to change with future knowledge.

Exposure hazards for the entire population were not formally considered by the international commission until 1956, in Mexico City (3), and advisable levels have not yet been recommended—although they are due to be released in 1958. In recent discussions of the risks of low doses from X-rays and other radiations, the concern is not so much with effects on individuals as with the entire group whose gonads are exposed prior to or during the reproductive period of life. The reasons for this attitude seem difficult to comprehend by some prominent physicists as well as radiologists. Without a clear understanding of the point, however, any discussion of radiation risks from low doses must seem academic. It is therefore desirable to explain this background as clearly as possible.

#### GENETIC EFFECTS

The basis for understanding the genetic problem is the work of H. J. Muller (1927) (4) and of others since then who have established the "genetic effects" of radiation beyond all reasonable doubt. Simply stated, we know that: (1) Radiations produce mutations proportional to the dose absorbed by the genes, (2) mutations are harmful almost without exception, (3) that there is no threshold below which radiations do not have this effect and (4) that the number of mutations produced is the same whether relatively few genes are given a high dose or if the same dose is distributed in small fractions to a large number of genes. The last point (4) is the crux of the matter. It means that the number of mutations produced is the same whether or not one gives, for example, 100 r to the gonads of 1,000 individuals, or 100 r to the gonads of 10,000 or to 1,000,000, individuals. In the first sample each person would get

0.1 r to the gonads and in the last 0.0001 r. Nevertheless, the number of mutations in the two samples would be statistically equal.

It has been estimated by the British Medical Research Council (5) (which has published a more thorough analysis than our United States National Academy of Sciences) (6) that radiations from natural sources at rates of 3 to 4 r per thirty years accounts for 10 to 20 per cent of the mutations which occur spontaneously. In civilized countries such as the United States, the per capita dose to the gonads from medical radiation now approximately equals background radiation, that is, 3 to 4 r per person per thirty years (the assumed reproductive life period). Therefore, medical radiations, at this time as we perform them, are adding another 10 to 20 per cent to the number of mutations.

What do we recognize as radiation-induced mutations? There are none characteristic of radiations alone; radiations produce only an increase in the naturally occurring ones. Conspicuous mutations resulting in fetal death, or an embryonic monster with a gross structural defect — such as anencephaly, are rare, and are relatively unimportant. Those which result in an increased incidence of feeble-mindedness, or increased susceptibility to disease — such as virus infections, diabetes, or certain anemias, or that accelerate aging processes, or that result in any condition that decreases our adaptability to the natural environment and which increases the dependence on welfare expenditures in civilized society are far more important, and are the reasons for the present concern.

The authorities responsible, that is, the National Committee on Radiation Protection (7) and the committees of the United States National Academy of Sciences, have recommended no more than a total of 10 r average dose to the gonads per thirty years from all "artificial" sources (including medical) over and above the natural background for the total population. At the present rate, if we are receiving 3 to 5 r from medical sources, and approximately 0.1 r from fallout, etc., we are running about half the total recom-



mended, 10 r, leaving little future leeway for expanded industrial exposures and no margin in case the tolerance dose is revised downward in the future. In consideration of all these known facts, and of our still considerable ignorance, it is our duty to do all in our power to reduce the doses from whatever sources, whether medical, or industrial, or military, since the inescapable conclusion must be "the less radiation, the better." However, since we must use radiations in medicine or endure a larger sum of human misery, we must resolve to use our radiations as efficiently as possible.

#### SOMATIC EFFECTS

At the present time there is not sufficient evidence to convince most scientists that low doses can produce significant somatic effects. As a consequence, it is widely believed that there are levels of radiation to which individuals may be exposed without measurable harm to those individuals. We cannot be certain that this is true, especially since, as our knowledge advances, we are again being presented with evidence for significant changes at lower and lower doses. There are statements in the very recent literature that hundreds of rem\* are necessary to produce cancer, or leukemia, in man. In the not very old literature the requirement was for thousands of dose units. Most significant, however, is a recent British study (Stewart, et al) (8) that the incidence of leukemia is double the natural rate in a sample of children irradiated in utero when the mothers had pelvimetry, about 2.5 r. During this procedure the infants received total-body or almost total-body x-ray exposure at approximately the same dose, 2.5 r. In this country, Lewis (1957) (9) also has presented data which tend to show a no-threshold leukemogenic somatic effect.

Certainly radiations are not the only carcinogenic mechanisms we face; however, it is equally certain that they are among the most potent of all known carcinogens. The mechanisms of how radiations produce neoplasia are at present undetermined. Three methods seem likely: (1) By producing chronic injury in which neoplasms can develop, as in osteo-

myelitic sinuses, (2) by impairing cellular resistance to virus or to other agents which induce neoplasia, and (3) by mutations in somatic cells. There is some objective proof for the first two methods; none is yet supplied for the third.

#### PRACTICAL CONSIDERATIONS FOR PHYSICIANS

Since radiations as we must use them constitute hazards worthy of respect to the population if not to individuals, what can we do about reducing them? The answers have been supplied as completely as present technology permits in several articles and pamphlets. Foremost among them is Handbook 60, United States Department of Commerce, National Bureau of Standards, which is available from the Superintendent of Documents, Washington, D. C., for twenty cents. There is at the present time a strong tendency to make the recommendations of this Handbook legal requirements in the several states, prerequisite to the use of X rays and other radiations for medical purposes. Indeed, Pennsylvania and Texas have now adopted such regulations, and Colorado is well on the road to the same goal. (10)

The chief requirements of such legislation will be, first of all, registration of all sources of radiations. Next, inspections to see if they are being used safely, according to present standards and conditions. Some of the latter are:

1. Adequate construction of rooms used for radiations for shielding (a) physicians and technicians, (b) patients, (c) neighbors in adjacent spaces.
2. Requirements for safe equipment. Obsolete equipment is still in operation in many places since it is sold at relatively low cost to physicians who know little or who do not care as long as the apparatus produces films or fluoroscopic images.
3. Requirements for the safe use of the adequate, modern equipment in the properly constructed facilities. X-ray machines, like modern automobiles, can be used with a reckless disregard for safety.
4. Recommendations concerning film-badge or other monitoring devices to be worn by all personnel working in the department, and the maintenance of records.

\*roentgen equivalent man

5. Inspections, which would probably be annual.

There is considerable debate on the matter of exposure records for technical personnel, as well as for patients, arising chiefly out of the fact that there exists no simple, accurate way to measure significant doses to the gonads. In the first place, a suitable instrument for measuring dose is not available. Secondly, doses vary widely from installation to installation, as much as several hundred per cent in some cases, and therefore all situations would have to be measured; estimates of gonadal doses vary so widely as to be meaningless. Moreover, say some, we would not know what significance to attach to doses even if we could measure and record them.

At the present, the Atomic Energy Commission requires film-badge monitoring of all its licensed holders and their employees who use more than tracer amounts (11). This may be crude and inaccurate, but it has the great virtue of making radiation workers protection-conscious. Exposure records do not have to be accurate in order to be of value. Accurate determination of the factors used in radiography is possible, such as the kilovoltage, the milliamperes seconds, the filtration and distance, and the number of films. All this data should be recorded by technicians and made a permanent part of the patient's chart. Fluoroscopists should record in addition to the above, the actual fluoroscopic time, that is, the actual time the fluoroscope was in operation during the examination, and dose output in r-air, at the table-top distance. No modern fluoroscope should deliver more than 10 r per minute at this level.

Such records would almost invariably be lost if given the patient. They should therefore be kept by the physician, and if they conform to accepted standards at the time, they would serve as a barrier to successful claims for any alleged damages. Where more accurate estimates of dose are possible, as in teaching and research centers, they should be kept as well. In time they will serve the desired purposes, and, more important, furnish the basis for the statistical correlations

needed for advances in our knowledge in the field of low-dose effects.

We have attempted to measure doses in the University of Colorado Department of Radiology for the particular machines and protective devices and techniques we employ (12). We have used patients, phantoms and cadavers, where necessary and desirable, with the best measuring devices available. Trained physicists made the determinations. Some factors, shown in Table II, indicate some of the varia-

TABLE II  
PHYSICAL FACTORS INFLUENCING  
DOSAGE

1. Kilovolts-peak and waveform
2. Milliamperes
3. Exposure time
4. Number of exposures per examination
5. Filtration—inherent and added
6. Distance (F.F.D.)
7. Field size (at F.F.D. or at surface)
8. Cone or diaphragm
9. Tube housing
10. Distance from central ray in a plane perpendicular to central ray
11. Thickness of overlying tissue and underlying tissue
12. Type of tissue
13. Thickness of adjacent body parts
14. Local shielding

bles that modify our doses. Table III indicates the dose estimates obtained for the more common procedures in our Department. It should be emphasized that these doses apply only to our Department. They are approximately the same as doses administered in other similar departments under the supervision of radiologists and physicists, but they are probably not at all comparable to those delivered in many other situations. Infant fluoroscopy, Table IV, gives doses that are almost always near total-body or total-body exposures, with correspondingly high gonadal doses. This practice should be rigidly curtailed where conditions exist as they were in our clinic prior to 1955.

We were interested to calculate the doses administered to our hospital and outpatient populations for a given year, to see how they compared with the estimates of the National Academy of Sciences for United States exposure levels. As shown, Table V, our doses are some-



TABLE III  
DOSAGE FROM X-RAY EXAMINATIONS

EXAMINATION	VIEW	SE IN MILLIROENTGENS	
		To skin at central ray	To gonads Male      Female
Chest—72 in.	PA	35	0.04      0.3
Chest—72 in.	Lateral	115	0.14      1.3
Abdomen	AP	1330	125      250
Lumbar Spine	AP	1330	125      250
Abdomen	Lateral	6200	172      1000
Lumbar Spine	Lateral	6200	172      1000
Pelvis	AP	1500	1100      900
I. V. Pyelogram		6650	2400      2000
Pelvimetry		8860	—      2150
Thoracic Spine	AP	1330	1.7      28
Chest (photo-roentgen)	PA	870	0.73      15
Chest (photo-roentgen)	Lateral	1560	3.3      24
Femur		485*	45*      11*
Leg		16*	0.07*      0.07*
Cervical Spine		445*	0.25*      0.95*
Skull	PA	1250*	0.25*      0.40*
	Lateral	480*	0.20*      0.25*
	Occipital	1250*	0.25*      0.40*
Upper G. I. Series	Oblique & Lateral	2150**	112**      560**
	AP	530**	112**      560**
	Fluoro- scopy 34,000 to 4 to 6 52,000 min. & spot films		10 to 24 to 15 36
	Oblique & PA	1540**	210**      430**
Barium Enema	AP	530**	210**      430**
	Fluoro- scopy 25,000 to 3 to 5 43,000 min. & spot films		95 to 750 160
	Chest fluoroscopy in Rheumatic Fever Clinic (1 min. average) *Per view **Overhead films only	3000	0.8      0.5 (estimated)

what higher for this special hospital and clinic group, amounting to a thirty-year accumulation rate of 7.8 r against the estimated national level of 4.7 r. Consequently, we are attempting to reduce our levels by every possible means.

Some of the things we are doing can be done in any situation, whether hospital, clinic or private office:

1. Avoid all unnecessary examinations. Do only those radiological procedures for which there is a good clinical reason.
2. Avoid unnecessary and too frequent follow-up studies. Again, use good clinical judgment, and do not hesitate to proceed if the situation calls for radiology.
3. Avoid fluoroscopy wherever possible. Film studies are safer by factors of hundreds. Especially avoid infant fluoroscopy.
4. Abandon routine survey studies wherever possible. Routine chest surveys are not worthwhile for case finding except in selected situations. Such surveys are also uselessly expensive. Routine pelvimetry is especially condemned. On the other hand, if needed for clinical reasons, it should be used without hesitation.
5. Radiation therapy for benign conditions should be used only as a last resort. It is almost never the treatment of choice for benign lesions in young persons. This applies to I-131 therapy for hyper-

TABLE IV  
INFANT FLUOROSCOPY—70 Kvp., 3 mas.  
Table top—tube distance—18 inches, 2.0 mm., Al filter  
(Direct measurements on an infant cadaver)

	Dose to skin at central ray	Dose to gonads if not covered by shield	
		Male	Female
Chest fluoroscopy	2,500 to 5,000 mr/min	Gonads in the direct beam	
		1.8 mr/min	0.9 mr/min
		Gonads not in the direct beam	
		1800 mr/min	900 mr/min
Abdominal fluoroscopy	2,500 to 5,000 mr/min	1800 mr/min	1500 mr/min

# PRECAUTIONS IN MEDICAL RADIOLOGY

TABLE V  
GONADAL EXPOSURE DOSE TO THE UNIVERSITY OF COLORADO  
MEDICAL CENTER PATIENT POPULATION  
1955-1956  
(Fiscal Year)

Total X-ray examinations .....	27,674
Male .....	13,560
Female .....	14,114
Weighted average gonadal exposure dose per examination	
all patients .....	0.33 man-roentgens
males .....	0.24 man-roentgens
females .....	0.43 man-roentgens
Total gonadal exposure does to all patients .....	9250 roentgens
Total gonadal exposure dose to all males .....	3200 roentgens
Total gonadal exposure dose to all females .....	6050 roentgens
Estimated number of different individual patients seen at Medical Center (counting both X-rayed and non-X-rayed patients seen)	36,300
Estimated average gonadal exposure dose per patient seen at the Medical Center (counting both X-rayed and non-X-rayed pa- tients seen) .....	0.26 man-roentgens

TABLE VI

Examination	DOSE TO MALE GONADS, mr LOCAL SHIELDING	
	No	Yes
AP pelvis	1600 (100%)	100 (6%)
AP abdomen, or AP lumbar spine	990 (100%)	87 (9%)

thyroidism as well as to X-ray for plan-  
tar warts, acne, etc.

6. Use high kilovoltage techniques with  
the lowest mas. possible, at the greatest  
practical distances.

7. Use at least 2 mm. of aluminum fil-  
tration over the tube port.

8. Use cones or diaphragms or light lo-  
calizers to limit the field size to the de-  
sired area. Check this by seeing the un-  
exposed margins of the field on every film  
as in Figure 1.

9. If you do not have cones or dia-  
phragms or light localizers, shield the pa-  
tient's gonads with protective material,  
such as lead, if they do not have to be  
in the field of examination. This is par-  
tially efficient, as shown in Figure 2 and  
Tables VI and VII.

10. Use the best screens and the fast-  
est film available, consistent with the de-  
tail required.

11. Employ well-trained technicians,  
such as those certified by the American

TABLE VII

## ILLUSTRATING THE EFFECTIVENESS OF COLLIMATING DEVICES TO REDUCE ADULT GONADAL EXPOSURE DOSE

I. PA Chest examination, 72-inch F.F.D., 86 Kvp.  
10 mas.

Male gonadal exposure dose

Collimating device	milli- roentgens per film	percent
No collimating device	0.70	100
"Videx" adjustable round lead diaphragm	0.080	11
"Videx" plus lead screen shielding the patient outside the field desired to visualize	0.070	10
Lead screen shielding the patient outside the field desired to visualize; no diaphragm	0.19	27

II. AP chest — Tomography — 30-inch F.F.D.,  
56 Kvp. 60 mas.

Collimating device	Male gonads		Female gonads	
	mr. per film	per- cent	mr. per film	per- cent
No cone, diaphragm or shield	3.2	100	1.7	100
Shielding the pa- tient outside the field; (lead apron)	0.34	11	0.17	10

Registry of X-ray Technicians, in order  
to avoid unnecessary repeat examinations  
and exposures.

12. Do not permit technical personnel





Figure 1. X-ray with unexposed borders, showing the effectiveness of coning.

or physicians to remain in the room when the machine is operating unless it is imperative for the care of the patient. On such occasions, *e v e r y o n e* should wear aprons. Hands should always be protected with leaded gloves if it is necessary for technical personnel, including the physician, to place the hands in or close to the exposure field. Whenever possible, use devices or persons to hold infants or other uncooperatives who will do so only once or twice in their lifetime.

13. Store all radium and radioactive materials in adequately shielded containers, according to the standards prescribed by the National Committee on Radiation Protection.

14. Only properly qualified and experienced persons should handle radioactive materials, such as the natural and artificial isotopes, and then only with forceps or tongs, and with adequate shielding. Work should be done rapidly and efficiently to spend the least time near the source consistent with the good care of the patient.

15. Seek instructions from trained individuals on safe practices and good techniques. Advice from salesmen is generally not to be trusted. Have inspections



Figure 2. A satisfactory method for shielding the gonads when cones or diaphragms or light localizers are not available.

by trained health physicists or by qualified radiologists of the radiology facilities and practices at least yearly, or at any other time when the situation requires it. Maintain records of such inspections. They will serve to protect against claims of carelessness.

Great advances are to be expected in the science of radiology in the future as in the past. New techniques such as image intensifiers already make it possible to accomplish adequate fluoroscopic visualization and film exposure with doses which are fractions of those conventionally used. Much improvement will undoubtedly take place in these instruments at a corresponding reduction in their cost.

New and more efficient types of fluoroscopic screens are also to be expected. Better combinations of screens and films may also make possible reductions in exposure. On the other side of the picture, there seems to be no hope for increasing the biological resistance to the damaging effects we have discussed.

In summary, we should employ the techniques of radiology with proper appreciation and respect for the aids they are able to supply, with caution against the dangers that attend their use, and with hope that the future will make it possible for us to employ them more widely, with greater good for the patient, more convenience to the physician, and, at the same time, with lessened risks for all.

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# Radiology's Responsibility to the Atherosclerotic

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and

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Atherosclerosis is among those pathological conditions referred to as the degenerative diseases. These diseases are receiving intensive investigation in many areas. The rapidly accumulating knowledge regarding atherosclerosis has not yet been fully assimilated for clinical usage. Surgical achievements in the management of the complications of obstruction and aneurysm are well known. More recently, efforts to surgically revascularize the ischemic myocardium are receiving increased attention. Medical management has been somewhat less spectacular but equally progressive in its efforts to approach the disease as a generalized process.

The availability of surgical treatment for some of the complications of atherosclerosis has made physicians and patients alike increasingly aware of the incidence of the condition. One can no longer consider this condition limited to the "twilight" years of life. During the Korean Conflict the coronary vessels of 300 American casualties, averaging 22.1 years were examined. Gross evidence of coronary atherosclerosis was present in 77.3 per cent, varying from minimal change to complete occlusion of major branches (2). The "young coronary" victim is all too familiar to the physician. Even atherosclerosis of the aorta may be complicated by occlusion in the early thirties. Once symptoms arise from aortic involvement, average survival is only eight years (5), most deaths being due to cerebral or coronary vascular involvement.

Since most patients die from impairment of cerebral or myocardial circulation, any satisfactory therapeutic approach must be for the generalized disease process. There is controversy as to what extent exercise, fat intake, familial tendency, and stress interrelate, but all

may be etiologic factors. There are many therapeutic approaches. Kinsell (4) advocates substitution of unsaturated fats from vegetables and limiting the quantity of animal fat in the diet. In an effort to reverse or stop the progress of atherosclerosis in a group of young patients, the 2349th USAF Hospital is applying Kinsell's approach in clinical trial. Measurable clinical findings and serum levels of cholesterol and lipids are being followed. Thus far, inconclusive but encouraging results have been observed by both Kinsell and the group at this hospital.

Complete discussion of the clinical diagnosis of atherosclerosis is beyond the scope of this paper. The use of contrast media studies in obstructive complications and the radiographic signs of aneurysm are extensively discussed in medical literature. It is noteworthy that an audible systolic bruit is usually associated with conditions producing even minor narrowing of the arterial lumen. There is growing clinical awareness of the bruit as a valuable physical finding in atherosclerosis.

Observation of calcific plaques in the arterial tree by the radiologist is as conclusive of the diagnosis of atherosclerosis as is biopsy. Since this is a generalized disease process, the particular site at which the plaque lies is of little significance. It has been shown that in aortic occlusive disease there is little correlation between the sites of obstruction and of the calcification (3). We recently examined the abdomen films on 21 coronary artery disease patients with an average age of 39.2 years. When one compares this group with a like number of patients with established discogenic disease (average age of 39 years), a three-fold greater incidence of roentgen-demonstrable atherosclerosis in the coronary group was observed. It is unusual to have clinically apparent occlusive disease of large arteries and not have radiographically demonstrable arterial calcification in

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Read at the Radiological Section, Annual Session of the Arkansas Medical Society, Hot Springs, Ark., May 6, 1958.



FIGURE 1.

the same region of the body (5). The value of observing vascular calcification *per se* lies in the fact that such an observation is *sine que non* evidence of atherosclerosis.

Radiographically demonstrable calcification is not an early finding pathogenetically. In reviewing 936 sets of lumbosacral spine films on Air Force Academy and Aviation Cadet applicants, we were unable to observe a single case of abnormal vascular calcification. Yet casualties examined during the Korean Conflict, as previously cited, were approximately the same age and three-quarters of these men had gross autopsy evidence of atherosclerosis. Although not apparent early in the pathogenesis of the disease process, plaques are often seen as

calcium deposits at the base of atheromata many years before the appearance of clinical symptoms and thus are a very worthwhile radiographic observation (figure 1). Pipe-like calcification (figure 2) in the media of muscular arteries, Monckeberg's sclerosis, does not represent the same process (1).

Medical management, at present, is primarily directed toward arrest or reversal of the disease process by dietary correction following early or subclinical detection. Although a completely satisfactory answer to treatment has not been found, the intensive investigation now being done will most likely provide many answers in the future. The radiologist has an opportunity and responsibility to point out





FIGURE 2.

cases both for the benefit of the patient and for the purpose of study.

The radiologist's role in contrast media studies and in diagnosing an aneurysm from abdomen films is clearly established. Little has been said about his opportunity, often fortuitous, to detect many cases before severe complications or even clinical symptoms arise. The radiologist is trained to recognize arterial calcification. This knowledge is most often used to differentiate arterial plaques from calculus, aneurysm, tumor, inflammatory process, or physiologic calcification. It is only occasionally that we have considered arterial calcification as a valuable observation in itself.

The physician examining the intravenous pyelogram of a patient complaining of impotence may not note the calcified hypogastric arteries which may represent a significant diagnostic clue to the patient's real difficulty.

The examiner of spine or pelvis films may not look past the bony structures and

note vascular calcification, indicating vascular insufficiency as the possible cause of hip or leg pain. Carotid artery calcification and the varied symptoms of cerebral arteriosclerosis should be given similar differential diagnostic consideration. Any x-ray study may afford an opportunity to diagnose the presence of atherosclerosis with certainty.

Determination of the age at which arterial plaques are a significant finding when discovered incidentally, is difficult. It is our practice to make the finding of vascular calcification the "high-light" of the report in patients 30-40 years of age. In the 40-50 year age group, the observation is a prominent part of the report. In the over 50 year age group, we report the observation as an incidental finding unless it relates to the condition which prompted the examination.

#### SUMMARY

Detection of atherosclerotic plaques by roentgen means is an indication of serious generalized disease. As knowledge

regarding clinical management of atherosclerosis increases, the radiologists' responsibility to identify sub-clinical cases becomes more important.

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## Prepayment Insurance

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We are all students. We have learned that in the act of teaching he who teaches learns more than he teaches. Thus all of us in medicine are at the same time teachers and students. More than ever before the world must be in the hands of the young in heart, able to feel as well as understand human problems and strong enough to grapple with them. Such are the students.

Alexander, the Great, like you also in his twenties, is said to have bemoaned the fact that there were no new worlds to conquer. We, so little ahead of you in medicine, have seen our world so overturned that however well we have conquered the old, this new one is fresh for battle. We are wise to know that it will ever be thus. The truth that we must fight as hard to preserve freedom as to attain it or, as Jefferson said it, that the Tree of Liberty must be continually nourished by the blood of patriots *and* tyrants, may seem to be a bitter truth, but it is truth.

Doctors starting prepayment insurance were fighting a threat of socialism which they feared. Some mistakenly think the fight was won but we know that there is no permanent victory, but only

enough to encourage us to go on. We cannot turn back now for the inexorable force of economic pressure and the accelerating growth of our credit economy leave no free choice except the voluntary system we support. Everything up to now is only the prelude to the future we face.

The imminence of graduation is an appropriate time for personal revaluation, for stock taking, and for renewing philosophical values. And it must be recognized that while Shakespeare, the great student of humanity, referred to those who may be born great, may achieve greatness, or may have it thrust upon them, that the road of personal achievement only is the solid way in our profession.

Our achievement will rest in considerable measure upon our awareness of the physician's modern dilemma and our wisdom in adjusting to it. This dilemma stems from the fact that this profession of ours is dedicated to the service of humanity, to the relief of human suffering as is the clergy; but also from the fact that medicine is the business by which doctors support their families. Unless these two aspects of practice are properly balanced the profession is damaged in its relations to the whole community. If a single doctor allows them to be too far

Prescribed to Senior Class, University of Ark. School of Medicine, May, 1958.



unbalanced, the entire profession is harmed, but if a whole group of doctors merely seem to the public to be primarily mercenary, a noble profession may be branded as a trade. The very same economic pressures which have made possible and even necessitated the phenomenal growth of health insurance have forced the medical profession to be more concerned than ever before with the business of practice. The readjustment to this fact of life has undeniably been a factor in the shifting prestige of the profession.

Among the major critical alterations which have so profoundly affected our whole way of life in this generation are two which are controlling in the problem of providing medical care for our people.

(1) We are in a rapidly expanding credit economy. Nearly everything is being bought on credit. Pay installments before or after the event is an ever more firmly established fact of our way of life. Who can expect that a big medical bill can be paid out of current income (always unexpectedly) when even small household items must be bought on time? In addition, who can expect that the habits of prepayment now followed in varying degree by many more than a hundred million Americans will be easily changed?

(2) The rising costs of ever more complex health care, especially hospital costs, aggravate rather than ease the rush into a credit system of meeting these costs with prepaid benefits, the only alternative to compulsory tax supported methods.

The modern doctor then must be concerned with proper ways to provide more rather than less health insurance. And, when this method of paying the bill becomes almost universal, even minimum safety for the profession demands that he be in the midst of management and responsibility for the general system. Also the public interest too demands that he exercise wisely this responsibility.

At the present time it is estimated that slightly less than  $\frac{1}{3}$  of the private expenditure for health care comes from prepaid subscriptions and premiums. Therefore, it can be expected that the demands which are already widespread and insistent for more coverage will increase rather than lessen. But, with rising costs

requiring increasing rates for the already inadequate scope of benefits, every reasonable way must be found to avoid unnecessary cost and to promote those methods of more efficient operation which add to economy. By self discipline the profession must make sure that its members do not take advantage of insurance as merely enhancing ability to pay and therefore increasing the costs of medical care.

Blue Shield through its locally controlled non-profit plans all of which are sponsored by the local medical profession, is the best means by which doctors generally can exercise their duties and responsibilities in this area. Each plan is a cooperative interposed as a business agent between the doctors and their patients to facilitate prepayment share the risk aid for the payment of doctor bills. The community rate for these programs does give some subsidy to the bad risk groups such as the aged but this is clearly in the community interest. National Blue Shield is a union of independent Plans for the exchange of information and assistance in interstate and national group coverage. Its research and educational effort is valuable to all Plans. It aids in the development of national programs, the role in Medicare being a recent example of note. An ever growing responsibility of the doctor, greater for this medical class than for any previous one, is to know the facts about health insurance.

These facts will help him discharge his two specific responsibilities: (1) to retain as much control of this situation as possible in the interest of the public to whom he is dedicated. (2) to retain as much control of this situation as possible in his own enlightened self-interest.

In the careful study of my own responsibility as a private practitioner in this matter I firmly believe that the voluntary approach must be made to work or a compulsory method will certainly be imposed.

I am grateful for the opportunity to have talked about these things to all of you. Now let me close on a special word *for the class*: Not long ago, reading while thinking of someone I love very much, I came to a deeper understanding of an innocently simple poem by Robert

Frost ("Stopping By Woods on a Snowy Evening")

"The Woods are lovely, dark and deep,  
But I have promises to keep,  
And miles to go before I sleep,  
And miles to go before I sleep."

This has been called a cynical age, and you are the most scientific generation that medicine has known. Still I am not afraid that you will laugh at the idealism

of my saying to you that in joining the cause of medicine you must come to know how lovely, and how dark, and how deep are these woods in which you live, and that you too have made promises. You and I know that the miles we have to go *must* be traveled in honor and nobility, in humble service, and in reverence for the life pledged to our care. And we know that the reward of doing this well is the greatest reward we can have.

## ◆ What's NEW ◆

### Abdominal Surgery

JACK DOWNS, M.D.\*

This survey is concerned with recent advances in abdominal surgery. The cumulative literature in this area is so extensive that comment is confined to papers that seemed to be of original or authoritative interest.

Two new books are worthy of mention and are highly recommended: *The New Surgical Text* by Allen, Harkins, Moyer and Rhoads, (18), and Michel's *Blood Supply and Anatomy of Upper Abdominal Organs with Descriptive Atlas*. (1)

#### LIVER

The mortality from bleeding esophageal varices secondary to portal hypertension continues high chiefly because of the liver damage present. Adequate time has lapsed for better evaluation of the results of the various surgical procedures employed.

The most important preoperative tests of liver function are the bromsulfalein retention and serum albumin. If bromsulfalein retention is below 10 per cent. postoperative liver complications are unlikely. If the serum albumin is below 3.0 grams per 100 ml. there is a 66 per cent occurrence of liver complications.

McDermott (12) postulates that hepatic coma is ammonia intoxication and suggests that management of hemorrhage from varices should include elimination of the source of absorbed ammonia by evacuating blood from the gastrointestinal tract with cartharsis and enemas, and antibiotics to reduce the bacterial count. Blood, plasma, electrolytes, sodium glutamate, restriction of sodium also help in the preparation of the patient with bleeding varices for surgery.

Linton and Ellis report the emergency transpleural, transesophageal suture of bleeding varices to control hemorrhages, a shunting procedure is planned at a later date.

Emergency portacaval shunts are being done in increasing numbers, O'Sullivan and Payne (13) reported 9 cases for massive hemorrhage from varices. Temporary hemostasis was secured with the Sengstaken-Blakemore tube. Seven of their 9 patients had ascites, 6 had been in coma. Their patients were all obviously poor risks. Three died postoperatively. There was no further bleeding reported in the six survivors. Their current plan is to carry out prompt portacaval shunts when

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hemorrhage necessitates esophageal tamponade.

The most serious drawback of portacaval shunts other than progressive deterioration of liver function is the neuropathy that develops in about 20 per cent. It is rare in those cases with normal liver function.

John R. Robinson and Harvey R. Butcher, Jr. (14) (Washington University) have reported a new method of liver resection that proved successful in two cases. A needle is fashioned by bending a piece of No. 16 wire 20 inches long into a hair pin. The apex of the wire acts as the needle point. The looped end of wire is passed through the parenchyma near one margin 1-2 cm. proximal to the proposed line of resection. No. 2 Chromic catgut is then passed through the eye of the loop and the wire withdrawn so that a loop of catgut is brought through the liver. The needle is then removed from the catgut and one end of the gut passed through the loop and drawn taut. The interlocking procedure is repeated along the proposed line of incision. The long blunt pointed needle passes through the liver parenchyma without puncturing the hepatic vessels or large bile ducts.

Stucke (15) has reviewed the world literature on hepatic resections and reports 1,270 hepatic resections, 45 of the total right lobe and 153 of the total left lobe. Mortality was found to be between 10 and 20 per cent. Ninety-four of the patients had primary carcinoma of the liver, 13 survived for three years, and three for five years. He also reported 136 cases of hepatic resections for liver metastasis; eight of these patients were well five years later.

Experimental work is under way on hypothermia, both differential and general, in patients with severe hepatocellular disease necessitating some type of a decompressive shunt. No clinical application has as yet been reported.

A recent report by Ariel (16) reviews the treatment of primary and metastatic cancer of the liver at Memorial Hospital in New York City. Fifty patients were treated with either radiation therapy, intra-arterial nitrogen mustard, i s o t o p e

therapy or a combination of these methods. The patients all died, the average duration of life being 7 months. They summarized their report by stating that it conclusively demonstrated that the medical therapy attempted was not satisfactory for effecting a cure. It was felt that 50 per cent were palliated to some degree.

## BILIARY TRACT

### *Anatomy*

Millbourn (2) in 200 dissections investigated the anatomy of the excretory ducts of the pancreas and their relation to each other and to the bile ducts and duodenum. The pancreatic duct terminated in the bile duct in 85 per cent of cases. The common duct and duct of Wirsung terminated in a common papilla in 5.5 per cent, and the bile duct and main pancreatic duct terminated in separate papillae in approximately 9 per cent. He emphasized the fact that the distance of the major duodenal papilla from the pylorus varied from 5.5 to 9 cm., the average being 8 cm.

The locations of the major and minor papillae have real clinical significance in gastric resections for posterior penetrating ulcer in which these ducts may be injured, and in the presence of biliary disease such as fibrosis of the sphincter of Oddi and impacted common duct stones, and in trans-duodenal exploration of the pancreatic ducts. The general tendency in searching for the papilla either with or without duodenotomy is to assume an anatomic position much more cephalad than it actually is. It can usually be located with the duodenum intact by careful mobilization of the duodenum and head of the pancreas and palpation by compression of the lateral duodenal wall against the head of the pancreas.

One important conclusion from this anatomic study is that it is unsafe to dissect the pancreas from the duodenum distal to the level of the gastroduodenal artery because of danger of damaging the ductal system.

### *Radiology*

Studies (3) of Oral cholecystography with iopanoic acid (Telopaque) attest to the high degree of diagnostic accuracy of Telopaque. Doses of 2 or 3 gm. are ade-

quate in almost all cases and non-filling of the gall bladder when this amount of dye is given does not require re-examination with a larger dose.

Howard (4) accomplished gall bladder visualization with oral media in only 3 of 21 patients with mild to severe trauma during the week following injury. He concluded that there is some degree of impairment of hepatic function secondary to injury, operation, anesthesia or their combination sufficient to prevent adequate concentration of dye in the bile.

Intravenous cholangiography is the most significant advance in the study of the biliary tree in recent years. The concentration of Cholegrafen in the bile has been found to be 30 to 100 times that found in the blood. In the presence of significant liver damage the quantity excreted by the kidneys is in direct proportion to the degree of disturbance of liver function. Within 10 minutes after intravenous injection an initial film will usually visualize the hepatic and common bile ducts. There seems little justification in attempting to visualize the bile ducts with Cholegrafen when the serum bilirubin is above 4 mg. per 100 ml. and in the presence of bromsulfalein retention above 40 per cent. The indications for intravenous cholangiography are the patient who has had a previous cholecystectomy and has recurrent or persistent symptoms suggestive of biliary-tract disease, patients with non-visualization of the gall bladder with the oral dye, certain cases of biliary tract disease of infants and small children and isolated cases of relapsing pancreatitis. Intravenous cholangiography is most helpful in demonstrating the presence of partial obstruction of the common duct secondary to stones, fibrosis of the sphincter of Oddi, and incomplete strictures of the common duct.

Routine operative cholangiography still seems to enjoy considerable popularity despite objections summarized by Warren and Cattell (9). Two interesting papers dealing with retained common duct stones deserve mention.

Ashmore and his co-workers (10) placed radiolucent gall stones in obstructed dilated canine common bile ducts. Stones that were 6 to 8 mm. in diameter

nearly always visualized with cholangiograms. Those 2 mm. in diameter were seen about once in five examinations and those 3 to 5 mm. in diameter with intermediate frequency.

Cole and Harridge (11) followed 9 patients who had shadows interpreted as retained common duct stones in postoperative cholangiograms. The stones disappeared in 7 cases after prolonged T tube drainage and administration of 3 or 4 grams of bile salts daily. In all 7 it was possible to keep the T tube clamped continuously. In the other two the stones were removed at operation. The great variation in the percentage of common duct explorations reported in the literature is also fairly good evidence that a large number of common duct stones are passed or dissolved.

#### *Clinical*

The continued controversy between early and delayed operations for acute cholecystitis seems out of proportion to the relative merits of either side. The greatest mortality apparently occurs in patients treated upon an emergency or semi-emergency basis in large city hospitals in which the patients are less well nourished and have delayed admissions to the hospital. The advocates of early operation are more commonly found among surgeons dealing principally with private patients.

E. Delannoy (7) reported 5 of 17 cases of cancer of the gall bladder in which malignancy was not suspected until pathologic examination of the surgical specimen revealed its presence. All 5 gall bladders contained stones and 4 were acutely inflamed. These masked cases of cholecystic cancer constitute an argument for cholecystectomy rather than cholecystostomy whenever it is technically possible. Carcinoma of the gall bladder is found in only 1 per cent of the gall bladders removed at surgery. The primary indications for cholecystectomy remain the non-malignant complications of calculous disease.

Cattell and Warren note that in difficult gall bladder dissections the distal common bile duct may almost always be easily found in the supra-duodenal area



even in the presence of marked inflammatory reaction. If it then appears that dissection around the cystic artery, cystic duct and common hepatic duct will be unduly hazardous, the surgeon may elect to open the common duct where it is exposed and insert a Bakes dilator proximally to delineate the common hepatic duct and particularly the right hepatic duct.

Herrington (5) (Vanderbilt University) compared the postoperative courses of 180 patients in whom the common bile duct was closed after exploration with those of 89 patients where the duct was closed with drainage. The postoperative hospital stay averaged 11.5 days for the former group and 16.3 days for the latter. It was felt that morbidity was definitely increased by drainage. Interestingly enough major complications were less in the group where the duct was not drained. The most important prerequisite to closure of the common duct is the establishment of complete patency of the ampula of Vater. The authors failed to state the indications for closure and drainage. Perhaps they closed only those ducts where there had been a gentle, atraumatic, negative exploration, and drained the more complicated ones. At any rate it seems a safe procedure where the ampula is patent and the duct has not been badly traumatized.

Strictures of the common duct are still much more easily prevented than repaired. Considerable controversy continues about the preferred method of repairing them. Most authors agree that theoretically, at least, it is preferable to achieve an end to end anastomosis of the damaged duct, thus preserving the sphincter of Oddi. It is further agreed that ascending cholangitis is a reflection, more of obstruction than of reflex or regurgitation into the biliary system. Many surgeons prefer the Roux-Y hepatico-jejunostomy when an end to end anastomosis cannot be performed. Cole (8) pointed out in this respect that when the Roux-Y procedure is employed, the defunctionalized loop should be at least 36 cm. long to prevent regurgitation into the biliary tree. It is doubtful if a loop no longer than this will prevent regurgitation into the biliary tree. Barium has been observed to re-

flux into the biliary tree in patients who have had a gastro-jejunostomy more than 36 cm. beyond the choledochojejunostomy; however, as a rule no cholangitis has been observed in the absence of stenosis of the biliary-intestinal anastomosis.

In the final analysis a good result is likely if adequate length of a relatively normal common duct is available for anastomosis, regardless of whether the anastomosis is done to a relatively normal distal segment of the duct, to the duodenum or to the jejunum by Roux-Y.

The choice of a prosthesis for common duct repair remains a controversial subject. Madden & McCann report experimental studies indicating that the longer the prosthesis is left in place the more likely was recurrent stricture. Cattell's experience on a clinical basis does not bear out this experimental observation. He currently leaves his stints in place six to twelve months and has found that in general the larger the caliber of the prosthesis the better the result.

Silen (6) and his associates found that prolonged contact of the common bile duct with a rubber tube does not appear to be associated with an increase in the inflammatory reaction in and about the anastomosis or with an increase in the occurrence of stricture. It seems important to keep the long arm of the T tube clamped and the dilating effect of bile running through an anastomosis present.

#### PANCREAS

Oliver Cope (19) reports 2 recent cases of concomitant pancreatitis and hyperparathyroidism. In reviewing the literature it was found that the association of pancreatitis, either with or without pancreatic calculi, and hyperparathyroidism, had been reported in five isolated cases. The clinical impression suggests that the presence of the hyperparathyroidism initiates the pancreatitis by deposition of calcium in the pancreatic ducts with subsequent blockage of the ducts. The majority of pancreatic stones are composed of calcium carbonate and phosphate and are located primarily within the ducts. The prompt subsidence of the pancreatitis following parathyroid adenectomy was explained by resorption

of the calculi following return of the normal serum calcium level.

Ellison (17) has published a further report on ulcerogenic tumors of the pancreas since he and Zollinger reported their first 2 cases at the American Surgical Association meeting in 1955. He now has collected 24 cases of fulminating and often fatal peptic ulceration, excessive gastric secretion. (The 12-hour nocturnal secretion frequently exceeds two liters and 100 milligrams of free hydrochloric acid.) There are rapidly progressive atypically located ulcers or marginal ulcers that recur despite adequate medical or surgical therapy. In 14 patients the tumors were single, in 10 they were multiple. Nineteen of the 24 lesions were malignant.

The non-insulin producing tumor was not recognized until autopsy in 9 patients who underwent 23 operations for 35 primary and recurrent marginal ulcerations and in each instance died of ulcer with average survival time of 17 months.

The pancreas should be carefully explored in every case of peptic ulceration that comes to surgery. Resection of the body and tail of the pancreas may well be justified, if no tumor is found on careful examination, before subjecting the rare problem case to total gastrectomy to control the acid factor.

Doubilet and Mulholland (20) have described a technic for pancreatography during abdominal operations that is no more difficult than operative cholangiography and is without danger. By sectioning the sphincter of Oddi and cannulating the pancreatic duct with a fine plastic tube the duct system may be visualized. It is possible to visualize dilated ducts, cysts, calculi, stenosis of the duct, communication of ducts with cysts and the presence of acute inflammation and edema.

Four operations are currently in vogue for chronic relapsing pancreatitis in the absence of biliary panthology. Longmier and his group are advocating total pancreatectomy when the functional capacity of the gland has been severely impaired. Caudal pancreatectomy combined with pancreaticojejunostomy has been reported to give good results in 20 of 25 patients

who were followed 3 years by DuVal. Bartlett and McDermont favor a direct approach to the pancreatic duct, exploring it through a transduodenal approach. Doubilet and Mulholland continue to advocate sphincterotomy and report a series of 319 cases. Their results were good when patients remained on fat free and alcohol free diets. Take your choice.

#### SPLEEN

Splenoportography in portal hypertension has continued to be an almost indispensable adjunct in selecting the proper shunting procedure. When properly carried out the portal venous system is clearly delineated, avoiding an extensive, tedious and sometimes hazardous surgical dissection. The procedure may be carried out by the percutaneous injection of radiopaque material into the spleen. The occasional hemorrhage from a lacerated spleen makes it a safer procedure when done in the operating room after the abdomen has been opened.

The author has recently reported four cases of overtransfusion in massive hemorrhage. Three of these cases occurred as a ruptured spleen was being removed. It is imperative that an accurate estimate of blood loss be obtained and plans made to replace the loss without circulatory over-loading. If over-loading does occur 500-700 cc. of blood may be removed from the circulation by applying tourniquets to both lower and one upper extremity, tight enough to prevent venous return, but not obstruct the arterial circulation. The improvement is dramatic. Tourniquets may be used as a therapeutic trial when the diagnosis is in doubt. The excess blood may be removed by using a vacuum collecting bottle.

#### STOMACH AND DUODENUM

##### *Hiatus Hernia*

Increased emphasis is being placed on the repair of hiatus hernias before serious complications (hemorrhage and stricture formation) which are common in neglected cases, result. Epigastric pain, dysphagia, angina-like pain, heart-burn, gaseous eructation, are all indications for hernia repair when careful x-ray examination indicates that a hernia is present.

In recent years the thoracic route for



repair has been widely accepted because of the ease of exposure and repair. The recent literature indicates a trend away from thoracic exposure to abdominal repair for several reasons. Abdominal exploration can also be done and concurrent disease, which is frequently associated with the hernia and often of equal or greater significance, corrected. Using Allison's technic, repair may easily be performed with probably less trauma, anesthesia, and operative time and consequently less operative risk. The prolonged postoperative chest wall pain which is present in 10 per cent of thoracotomy patients is avoided.

Nissen (21) reports a simple method of dealing with hiatus hernia in poor risk patients. The stomach is drawn out of the hernia and sutured to the abdominal wall by a broad strip of fascia fashioned from the posterior rectus sheath. The operation has been satisfactory in 7 patients. More time will be required to determine the true merit of this procedure.

#### *Massive Hemorrhage from Peptic Ulcer*

Dr. Stewart (22) and his associates admirably summarize much current thinking on the problem. They advocate immediate blood replacement and gastric resection based on the following concepts. Danger is increased by age and serious associated disease which lower the patient's physiologic reserve. Whether gross bleeding from peptic ulcer in a given patient has ceased or whether it will recur are open questions; explosive secondary hemorrhage may be rapidly fatal even under hospital treatment. Bleeding from a peptic ulcer can be arrested surgically by an operation, which is also good treatment for the ulcer diathesis. Surgical operation and resuscitation from hemorrhage can be done concurrently with proper use of blood transfusion, good anesthesia and surgical skill.

In upper gastrointestinal hemorrhage of obscure origin where surgical intervention becomes imperative certain measures are helpful. First make certain that the hemorrhage originates in the upper gastrointestinal tract. The stomach duodenum and jejunum should be carefully ex-

amined. A liberal gastrotomy and duodenotomy should be done with careful attention to the second and third portions of the duodenum. Irrigation of the mucosal folds with saline may aid visualization of small lesions. Application of a sponge or suction tip may likewise traumatize the mucosa and make localization of the bleeding more difficult. If all efforts to locate bleeding fail, "empiric", 75 per cent gastric resection still seems the best assurance against further bleeding.

#### *Gastric and Duodenal Ulcer*

There is general acceptance of Dragstedt's theory that duodenal ulcer is usually due to hypersecretion of gastric juice of nervous origin, whereas gastric ulcer is due to hypersecretion of gastric juice of hormonal origin, dependent upon prolonged or excessive liberation of gastrin, the gastric secretory hormone.

A new operation, antral exclusion and vagotomy, is based upon the premise that the cephalic phase of gastric secretion must be minimized or abolished and that this is the "sine qua non" of successful duodenal ulcer therapy.

The standard vagotomy is done, the stomach transected at its mid portion, leaving a proximal pouch of 50 per cent of the stomach. The distal stomach is excised down to 6 cm. from the pylorus, leaving 50 per cent of the antrum which is then closed. A routine gastrojejunostomy then completes the procedure.

Waddell (23) has recently reported results with this procedure in 100 patients. Eighty-one patients followed for six months or longer exhibited essentially the same side effects as those who had had limited gastric resection and vagotomy. The success of antral exclusion and vagotomy as a procedure for definitive treatment of duodenal ulcer will depend upon whether or not the ulcer forming tendency is controlled permanently. Future reports on this series should prove interesting.

Smithwick (24) has concluded that vagotomy combined with 50 per cent gastrectomy is superior to the standard subtotal gastrectomy. His operative mortality was slightly less and clinical re-

sults better. There was no case of recurrent ulcer reported in his series. Free hydrochloric acid was present in gastric contents in only 4 per cent as compared to 39 per cent after subtotal gastrectomy alone.

Edwards and his coworkers (25) report similar results when vagotomy was combined with 40 per cent resection. No evidence of a marginal ulcer was reported. Their results were described as excellent or good in 267 of 294 patients.

The post gastrectomy dumping syndrome is generally associated with rapid gastric emptying, resulting in hyperosmolarity with a compensatory shift of extracellular fluid and plasma into the jejunal lumen. Consequently, a reduction in circulatory plasma volume occurs. Hinshaw (26) has recently shown that an increased peripheral blood flow is present in many patients with dumping symptoms. The increased peripheral blood flow is closely related to the systemic symptoms of syncope, tachycardia, palpitation and weakness. The mechanism by which peripheral vasodilation is produced despite the fall in blood volume is as yet unexplained. Its explanation may well result in methods to combat this troublesome complication.

#### *Perforated Ulcer*

Recent articles on the metabolic changes imperiling the patient with a perforated ulcer point out that the perforation causes a chemical burn of the peritoneum. The square area of the peritoneum approximates that of the body skin. The fluid shifts that occur are analogous to those of a cutaneous burn. There is immediate and severe dehydration with loss of plasma volume and expansion of the extracellular fluid volume. Proper therapy should include replacement of plasma, water and electrolytes. The proof of the adequacy of therapy is the renal output.

Primary gastric resection at the time of perforation of a peptic ulcer is being received with increasing favor in recent years. The procedure while not new (Keetley, in 1899, was the first to perform a primary subtotal gastric resection for an acute perforation) may now be applied with equal, if not less, risk

than simple closure in the presence of adequate personnel and facilities. A relatively short duration of time between perforation and resection is preferable. Specific indications for resection in the presence of acute perforation are (1) perforation of a gastric ulcer; (2) perforation combined with bleeding; (3) large or multiple perforations; (4) pyloric obstruction; (5) ulcer symptoms of 12 months duration with previous positive x-ray evidence of an ulcer. Conservative treatment of an acute perforation is now associated with a prohibitive mortality and is unsatisfactory. The majority of patients treated by simple closure of the perforation require further medical or surgical management for control of ulcer symptoms. Primary resection where indicated is producing better results with lower mortality than simple closure.

#### *Cancer*

Some remarkably low mortality rates for total gastrectomy (2.8 per cent) have recently been reported; however, unfortunately, the percentage of cures is not improved by the radical procedures. Total gastrectomy for carcinoma of the stomach is still recommended only when it is necessary to obtain an adequate margin of normal tissue around the lesion.

#### *Technics*

Temporary gastrostomy as a substitute for (postoperative) nasogastric suction is a simple and logical procedure which avoids the esophageal complications of laryngeal obstruction, ulceration, perforation and late stricture. Patients are quite grateful when they awaken to find their Levin tube missing. The gastrostomy tube may be clamped, and removed at a convenient time when the patient's convalescence is assured. The tube, a No. 20 Foley catheter, is inserted through a stab incision in the anterior wall of the stomach and held in place with a purse string suture. The anterior wall of the stomach is then sutured to the anterior abdominal wall.

#### SMALL INTESTINES

##### *Meconium Ileus*

In less than 10 per cent of infants born with fibrocystic disease of the pancreas there is intestinal obstruction present at



the time of birth. Bishop and Koop (27) report a new operation for relief of the obstruction. The operation, intestinal resection with a Roux-en-Y anastomosis and ileostomy, removes the greatest portion of the distended and hypertrophied small bowel with the establishment of a safety valve. The single limb ileostomy allows instillation of pancreatic extracts into the distal obstructed ileum. Once the bowel lumen has been cleared the ileostomy being against the peristaltic stream often becomes nonfunctioning and there is no need for early closure. This is another addition to the growing list of operations for this perplexing problem. It sounds as if it incorporates the advantages of the Gross-Mickulicz type of ileostomy without the spur crushing and its attending complications.

#### *Diverticula*

Jejunal diverticula are the rarest diverticula of the intestinal tract. They occur in the later decades of life, most commonly in men. The diverticula usually cause no symptoms but may produce mild abdominal discomfort or gaseous dyspepsia. Mechanical obstruction is the most common complication. Surgery is best reserved for complications and incapacitating symptoms. Bowel resection with end to end anastomosis is the procedure of choice. It is well to remember that surgery for duodenal diverticula is beneficial in only one-half of the cases and that their removal may be hazardous and is associated with a high incidence of fistula formation.

#### *Intestinal Obstruction*

A very detailed and excellent review of strangulation obstruction appears in the August, 1956, International Abstracts of Surgery. Isidore Cohn reviews the literature and summarizes the contributions of previous investigators. He presents evidence that bacterial invasion is the cause of death and that *Clostridium welchii* is the organism involved. The use of adequate bowel antisepsis to prolong life indefinitely in dogs with strangulation obstruction demonstrates the vital role of bacteria in the cause of death. Following strangulation, bacteria are thought to invade the intestinal wall, and by their growth and production of toxins, are

thought to increase vascular permeability and to destroy the bowel wall. This leads to further blood loss, hematemesis, and general fluid loss. It also increases the permeability of the bowel wall and permits the gastrointestinal contents to permeate the bowel wall and find their way into the peritoneal cavity. Absorption from the peritoneal cavity into the systemic circulation causes death of the animal.

#### *Technics*

Neumann, Adie and Hinton (28) have developed an operation (Ileoentectomy) to control ascites or hydrocephalus. The operation consists of eversion of a segment of ileal mucosa within the peritoneal cavity. The absorptive function of the intestinal mucosa controls the ascites. In their reported series of eight cases a segment of terminal ileum 46 cm. in length was everted within the peritoneal cavity and intestinal continuity re-established. Four patients died within three weeks of operation from liver failure or hemorrhage from varices, but the four survivors have required no paracentesis, and have been able to take a diet containing a normal amount of salt.

#### APPENDIX

Bolman, Lloyd and Johnson (29) report an astonishing series of 391 patients with perforated appendixes treated without a mortality. The McBurney incision was used exclusively and nasogastric decompression routinely. Other adjuncts were pelvic irrigation with salt solution, non drainage, early ambulation and parenteral antibiotics. No intraperitoneal antibiotics were used.

#### COLON AND RECTUM

Edgar J. Poth (30) has recently advocated intraperitoneal irrigation with 200 cc. of 0.5 per cent Neomycin solution when there has been contamination by large bowel contents. Unfortunately he failed to mention that Neomycin is toxic when absorbed into the systemic circulation. Several recent cases of toxicity with marked respiratory paralysis have been reported when the drug was used in intraperitoneal irrigation in the presence of diffuse peritonitis. The usually inert drug was rapidly absorbed through the inflamed peritoneal surfaces. Its use

in this manner in the presence of peritonitis is contra-indicated.

### *Diverticulosis and Diverticulitis*

There has been a changing attitude toward management of diverticulitis in recent years. Mortality and morbidity rates following elective resection of the properly prepared, but not acutely inflamed colon are low enough to warrant a more aggressive attack on this disabling disease. Indications for elective operation are (1) intractability with recurrent episodes of inflammatory difficulties; (2) subacute obstruction; (3) walled-off perforation which responds temporarily to antibiotics and non surgical treatment; (4) unexplained melena with x-ray evidence of diverticulitis; (5) a fistula between the sigmoid and other organs; (6) recurrent or persistent urinary symptoms caused by diverticulitis; (7) persistence of a palpable mass or deformity from which malignancy cannot be definitely excluded.

### *Rectal Incontinence*

Pickrell et al (31) describe gracilis muscle transplant operations for rectal incontinence in 18 children and 16 adults. All but one of the children had been incontinent since birth because of imperforate anus, spina bifida, meningocele, or some neurogenic malformation involving the rectum or perineum. The adults included 3 paraplegics and 11 who were incontinent after operations on the anus or rectum. Rectal continence was established in all patients.

The gracilis muscle is the most superficial muscle on the medial aspect of the thigh and has a somatic nerve supply which makes it readily adaptable for transplantation.

### MEDICAL CONDITIONS SIMULATING AN ACUTE ABDOMEN

There are two medical conditions, both rare, that may simulate an acute surgical abdomen. Acute intermittent porphyria may cause cramping abdominal pain, distention, hyperactive bowel sounds, nausea, vomiting, shock like state, urinary retention, and in general simulate an acute small bowel obstruction, even to the x-ray findings. A history of previ-

ous similar episodes, a family history of porphyria and the presence of porphobilinogen in the urine are diagnostic. Laparotomy is frequently fatal. I have seen three cases of acute intermittent porphyria in the past 12 months which makes one wonder if the disease is not more common than generally realized. When in doubt the presence of porphobilinogen in the urine is diagnostic.

The other disease, essential hyperlipemia, is manifest by abdominal pain, hepatosplenomegaly or xanthomatous skin lesions with elevated fasting levels of serum neutral fat. The pain is usually upper abdominal in location and associated with nausea and vomiting. It is usually confused with acute cholecystitis or pancreatitis.

It is observed in lipid nephrosis, the nephrotic state of glomerulonephritis, diabetes mellitus, pancreatitis, hepatic disease, pregnancy poisoning, cachectic states, and glycogenosis.

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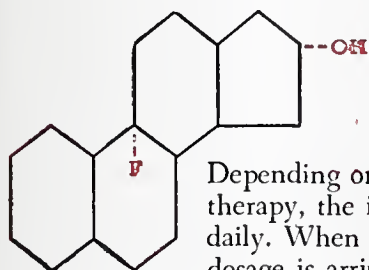


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**A TEACHING SEMINAR**  
**FROM THE**  
**UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE**

## Constrictive Pericarditis

OTTO M. SPURNY, M.D.\*

The diagnosis of constrictive pericarditis is an important and at times a difficult one. The prognosis is almost uniformly poor unless the diagnosis is made and a cardiac decortication carried out. Present surgical techniques make pericardectomy a feasible procedure that is followed by dramatic improvement in the majority of patients. The following case reports will serve to illustrate some of the problems involved in the diagnosis and management of this entity.

Case 1: A 20 year old man was admitted to the Medicine Service in June 1957 because of progressive pedal edema and abdominal swelling of 22 months duration. He had had no known serious illness or exposure to tuberculosis in the past. The arterial pressure was 100 systolic and 70 diastolic, pulse 72. No paradoxical pulse was recorded. The neck veins were distended. The lungs were clear. Heart size was normal to percussion, no apex impulse was felt. The rhythm was regular and a grade I diastolic murmur was heard at the apex. A firm liver was palpated 8 cm below the costal margin. There was 4+ pitting edema of the lower extremities. Venous pressure was 280 mm saline and the circulation time was 12 seconds. Vital capacity was 3.0 liters. Roentgenograms of the chest showed a normal size cardiopericardial silhouette and considerable calcification in the region of the right ventricle. Markedly damped cardiac pulsations were noted at fluoroscopy. The electrocardiogram showed sinus mechanism with a tendency to low voltage of the QRS complexes in the extremity leads and non-specific T wave changes. The patient's edema subsided on a regimen of restricted activity, restricted sodium intake and

diuretics. A pericardectomy was carried out by Dr. J. H. Growdon. The pericardium appeared as an almost continuous calcified sheet varying from 4 to 10 mm in thickness. The diseased pericardium was removed from the entire left and right ventricles. During the procedure the heart was able to extend to approximately twice the size that it occupied at the beginning of the procedure. Microscopic examination of the removed tissue revealed no specific etiology. The patient's recovery from surgery was rapid and uncomplicated and he was discharged 10 days postoperatively. When last seen in February 1958 he was asymptomatic and doing moderately heavy physical labor without difficulty.

Case 2: A 71 year old man was first admitted in the fall of 1957 because of marked shortness of breath on exertion and orthopnea. His arterial pressure was 180 systolic and 120 diastolic, pulse 100. A marked paradoxical pulse was present. Venous pressure was 370 mm of saline. Vital capacity was 1 liter. The neck veins were markedly distended. There was bilateral hydrothorax. The apex impulse could not be felt. The left cardiac border was percussed 11 cm from the midline in the 5th intercostal space. The rhythm was regular and no murmurs were heard. An abdominal fluid wave was demonstrated and a firm liver was felt 4 cm below the costal margin. There was massive dependent edema. Cardiac fluoroscopy revealed only minimal cardiac enlargement and decreased pulsations. This was in striking contrast to the marked cardiomegaly observed on a roentgenogram obtained 2 months prior to admission. The electrocardiogram showed sinus tachycardia, low voltage of the QRS complexes in extremity and precordial leads and inverted T waves in right and

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left sided precordial leads. Cardiac catheterization showed an early diastolic "dip" with high end diastolic pressure in the right ventricle. The patient was treated with restricted activity, limited sodium intake and diuretics. He was started on anti-tuberculous medication. His edema disappeared and he was discharged after 6 weeks on antituberculous medication. Three weeks later he was readmitted with marked dependent edema and dyspnea, having gained 25 pounds. After correction of his edematous state a pericardectomy was carried out by Dr. J. H. Growdon. The pericardium was found to be greatly thickened and the pericardial cavity was completely obliterated. After removal of the constricting pericardium the cardiac size increased considerably and a forceful beat was noted. Microscopic examination of the removed pericardium revealed fibrosis and granulomatous tissue resembling tuberculous granulation. Stains for acid fast bacilli were negative. Recovery from surgery was rapid. The patient was discharged markedly improved 20 days after surgery on antituberculous medication.

Case 3: A 72 year old man was admitted because of dyspnea on exertion and ankle edema which had developed over a 6 months period. Arterial pressure was 110 systolic and 80 diastolic, pulse 110. No paradoxical pulse was recorded. Venous pressure was 240 mm of saline and circulation time 35 seconds. The neck veins were not markedly distended. There was bilateral hydrothorax. The heart was not enlarged to percussion and no apex impulse could be felt. The rhythm was regular and a third heart sound was heard at the apex. The liver was palpated 5 cm below the costal margin. No abdominal fluid wave was elicited. Cardiac fluoroscopy showed slightly damped pulsations over the left ventricle and normal pulsations over the right ventricle. The electrocardiogram showed sinus mechanism, tendency to low voltage of the QRS complexes in extremity and precordial leads and flattening of the T waves. Cardiac catheterization revealed an early diastolic "dip" and elevated end diastolic pressure in the right ventricle. The patient responded to a regimen of restricted activity, limited sodium intake and

diuretics. A partial pericardectomy was performed by Dr. M. Hara. At operation the pericardium was found to be thickened, measuring 5-6 mm over the left ventricle. The pericardial sac was obliterated. Microscopic examination of the removed tissue showed granulomatous inflammation consistent with tuberculosis. No acid fast bacilli were seen on special stains. Recovery from surgery was rapid. The patient was discharged 11 days after surgery in good condition. He is still taking antituberculous medication. He has had no recurrence of edema or shortness of breath since discharge.

### Discussion

Constrictive pericarditis consists of a dense fibrous thickening of the pericardium which leads to compression of the heart. (1) This compressing scar interferes with diastolic relaxation with resultant decrease in cardiac output and engorgement of the systemic venous system. Descriptions of the clinical picture of constrictive pericarditis date back to the late 17th and 18th century. (2) Notable is a case of Lancisi from 1728 of a young man with a small pulse and marked swelling of the jugular veins and the abdomen who showed at autopsy a small heart with adherent pericardium. Morgagni in 1761 was able to report 7 cases, one a 40 year old man who showed a heart "so constricted and confined that it could not receive a proper quantity of blood and pass on." (2) In the last 60 years, especially since Pick's paper (Pick's disease) in 1896 there has been a general interest in this disorder. The clinical picture has become well delineated and the surgical techniques for the removal of the scar have been perfected to the point that surgery can be undertaken with a high rate of success.

Etiology: Usually there is history of antecedent acute pericarditis, often of uncertain etiology, or constriction may develop while an acute pericarditis is under treatment. In the majority of cases even a careful microscopic and bacteriologic examination of the compression scar fails to yield a definite etiology. (3) The most common cause in cases of known etiology is tuberculosis. (3, 4) Since the resected pericardial tissue may be negative for tubercle bacilli in cases previous-

ly proven to be tuberculous by aspiration and culture of pericardial fluid, it is generally assumed that tuberculosis is the causative agent in the majority of all cases. Bacterial pericarditis may lead to constriction and a few cases due to *P. tularensis* have been reported. (5) Histoplasmosis has been suggested as the etiologic agent in one case observed in our institution. Even though rheumatic valvular disease has been present in a number of cases of constrictive pericarditis it is generally agreed that this constituted a coincidental finding rather than a rheumatic etiology of the constriction. Occasional neoplastic involvement of the pericardial sac may produce constriction. (2, 6) Trauma, especially steering wheel injuries, has led to hemopericardium and subsequent constricting scar. (3) A case of constricting pericarditis after accidental deposition of a surgical needle in the pericardium has been reported. (7)

**Age and Sex:** The ratio of male to female cases is approximately 3:1 in various series. Constrictive pericarditis is usually regarded as a disease of young men. However, we observed two cases in their seventh decade during the past year both of whom underwent successful surgery (case 2 and 3).

**Pathology:** There is dense thickening of one or usually both pericardial layers ranging from 3 to 10 mm and more. The pericardial cavity may be completely obliterated or pockets of fluid or caseous debris may be found. The scarring may involve the entire cardiac surface even extending up to the great vessels. Calcification of various degree may be visible roentgenologically and so facilitate the diagnosis (case 1). In isolated cases the calcified tissue may form a complete shell around the heart (armored heart). The heart size characteristically is normal or even diminished.

Pathologic changes in various organs do not differ essentially from changes found in long standing right heart failure. The early appearance of liver enlargement due to engorgement and ascites may simulate the clinical picture of portal cirrhosis and will be discussed in more detail.

**Pathologic Physiology:** There is little

doubt that the basic cause of the deranged physiology is the constricting pericardial scar over the ventricles of the heart. This has been demonstrated by the production of experimental constrictive pericarditis in animals by the introduction of various irritants into the whole pericardial sac or portions thereof. (9) Adequate surgical removal of the constricting scar is followed by disappearance of the clinical picture. However, myocardial damage and atrophy, related to involvement of the subepicardial portion of the myocardium and prolonged compression may play a part. (10, 17) The scarred pericardium inhibits the relaxation of the heart during diastole. This decreases the venous inflow into the right ventricle. Pressure measurements in the venae cavae and the right atrium indicate that constriction of the big veins is not a significant factor. The decreased venous inflow in turn produces a decrease in cardiac output. (11) When the demands for cardiac output are increased during exercise the heart is unable to increase the stroke volume and can increase cardiac output only by increasing the cardiac rate. (11) Probably because of the diminished cardiac output with consequent renal retention of sodium and water the circulating blood volume becomes increased and the systemic as well as the venous pressure becomes elevated. (4)

**Clinical Picture:** As indicated earlier the clinical picture closely resembles right heart failure. A striking finding is the normal or even diminished heart size. The typical complaints that bring the patient to a physician are swelling of the abdomen and dyspnea on exertion. Often dyspnea will be present only on exertion. Abdominal swelling is due to the engorged liver and the accumulation of ascitic fluid. The patient's past history may reveal symptoms of previous acute pericarditis but this may be lacking.

On physical examination the arterial pressure is usually low and the pulse pressure is reduced. Characteristically there is a paradoxical pulse that may be of great importance in the detection of constrictive pericarditis. A variety of explanations for the phenomena of paradoxical pulse have been offered. The following explanation is given by Friedberg:



(12) Normal persons have a tendency toward paradoxical pulse with full inspiration since the slightly increased venous return during inspiration is outweighed by the greater volume of blood accommodated in the chest. In constrictive pericarditis this phenomenon is intensified as follows: The increased venous return during inspiration cannot be utilized because of the pericardial compression scar. On the other hand the increased pulmonary vascular capacity during inspiration diminishes the venous return to the left heart. The combination of impaired venous inflow and the retention of fluid in the pulmonary vascular bed cause the reduction in left ventricular output and in the size of the pulse. Clinically paradoxical pulse is best demonstrated by a drop in the systolic pressure at the end of inspiration of 10 mm or more and the concomitant decrease or complete obliteration of the pulse pressure. Diastolic pressures are usually normal. The cervical veins are engorged, both during systole and diastole. Pleural effusion occurs usually sooner or later during the course of the disease. Pulsations of the chest wall are minimal and the apical impulse is difficult to elicit ("quiet heart"). (13) Typically the heart is small to percussion. However, the overall heart size observed on the roentgenogram may appear slightly enlarged, especially if the patient is seen prior to the development of massive constriction. Auscultation reveals no evidence of organic valvular disease unless there is associated rheumatic or congenital heart disease. (2) The sounds may appear relatively distant and muffled and the rate is frequently accelerated. The rhythm is usually regular but atrial fibrillation occurs not uncommonly, apparently related to atrial involvement by the compression scar. An important finding is the presence of an early diastolic (protodiastolic) sound that is due to the rapid ventricular filling and/or the abrupt halt in ventricular filling. (14) In various reported series this sound was present in from one-half to almost all cases. It is usually heard best between xiphoid process and mitral area.

Ascites is an important part of the clinical picture. It may occur early (ascites precox) and often precedes the forma-

tion of subcutaneous edema. Together with the enlarged, non-pulsating liver it may suggest a picture of portal cirrhosis and lead to errors in diagnosis. Occasionally massive ascites may make palpation of the enlarged liver difficult and in long standing cases atrophy and fibrosis may supervene and the liver becomes small. Cyanosis of slight degree is common. It is related to pulmonary congestion caused by diminished inflow to the left atrium or venous peripheral stasis. The venous pressure in upper and lower extremities is elevated. Average values are 250 to 350 mm of saline, exceeding those ordinarily seen in right sided congestive failure. Pressure on the right upper quadrant causes further increase in pressure (hepato jugular reflux). Circulation time is usually prolonged and the vital capacity is reduced.

**Roentgenologic Findings:** Visible calcification of the pericardium obviously facilitates the diagnosis of adhesive pericarditis but does not necessarily denote constriction. The cardiac pulsations are minimal or absent on fluoroscopy or roentgenkymography. The heart is usually small or normal size. However, thickening of the pericardium may be so extensive that it produces an overall enlargement of the cardio-pericardial silhouette. Angiocardiography helps to estimate the thickness of the pericardial scar. The superior vena cava is distended and the associated ascites and the enlarged liver may elevate the diaphragm. Pleural effusion and thickening are common.

The electrocardiogram characteristically shows low voltage of the QRS complexes. The T-waves are usually flattened or inverted, at times even suggesting the "coronary" T-waves of myocardial infarction. Broad notched P waves are frequently present. (1)

**Diagnosis:** Beck has emphasized the clinical triad of chronic cardiac compression: (13) 1) A small "quiet" heart. 2) Venous engorgement manifested by distended neck veins and elevated venous pressure. 3) Ascites and enlargement of the liver. Confirmatory signs are:

- a) Small and paradoxical pulse.
- b) Low systolic and low pulse pressure.

c) Roentgenologic findings of diminished cardiac pulsations and occasionally pericardial calcification.

d) Limited objective improvement to medical treatment and rapid recurrence of congestive heart failure.

Cardiac catheterization yields valuable data for the diagnosis of constrictive pericarditis. Characteristically the right ventricular diastolic pressure is elevated as in right heart failure. The right ventricular pressure tracing shows an early diastolic "dip" followed by a high diastolic plateau and consequently an increased end diastolic pressure. The diastolic end pressure is more than one third of the right ventricular systolic pressure. This and the diminished pulse pressure distinguishes constrictive pericarditis from the catheterization findings in right heart failure. (14, 15)

**Differential Diagnosis:** As indicated earlier the occurrence of ascites early in the clinical course may suggest portal cirrhosis. Differentiation of constrictive pericarditis from congestive heart failure due to primary cardiovascular or pulmonary disease may pose a problem. Constrictive pericarditis should always be considered in a clinical picture suggesting massive right heart failure in the presence of a small heart.

**Treatment:** Consideration of the basic pathologic process — the compression of the heart by a thickened and scarred pericardium makes it evident that medical treatment in the long run will be unsuccessful. The only satisfactory definitive treatment is surgical decortication of the heart. However, the patients require medical management in the preoperative and occasionally the postoperative phase. Restriction of activity and limitation of sodium intake together with various diuretics will result in decrease or disappearance of edema. Thoracic or abdominal paracentesis has at times to be employed. Digitalis is usually not helpful in the management of constrictive pericarditis. If the pericarditis is recognized in the active tuberculous stage with pericardial effusion antituberculous treatment should be instituted as soon as the initial studies have been completed. If

the tuberculous etiology appears reasonably certain on clinical grounds, treatment should be started immediately rather than awaiting for the result of cultures. If ultimately the diagnosis proves to be erroneous, no harm has been done. If the tuberculous etiology is confirmed valuable time has been gained. With such an approach the occurrence of constriction may be prevented. In a series by Goyette et al (16) constriction developed only in 5 out of 27 cases.

It is beyond the scope of this discussion to attempt to describe the surgical procedures employed, which require a high degree of surgical skill. The pericardial scar is usually dissected first from the left and then from the right ventricle. Adequate pericardectomy over the left ventricle is important for relief of pulmonary hypertension. The criterion for adequate resection is the often dramatic increase in cardiac pulsations (case 1, 2, 3). After successful pericardectomy convalescence is usually rapid. Cardiac arrhythmias in the immediate postoperative period may make the use of digitalis and quinidine necessary.

**Summary:** Some of the problems associated with constrictive pericarditis are discussed. Three abbreviated case reports are given to illustrate the clinical picture.

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# What Is Your Diagnosis?



FOR ANSWER SEE PAGE 184

# Arkansas Public Health at a Glance

## VISION SCREENING PROGRAM IN ARKANSAS SCHOOLS

For the past ten years, the Division of maternal and Child Health has directed vision screening tests in Arkansas schools. This program grew out of an obvious need for some means of detecting those children with vision problems which might affect their learning processes.

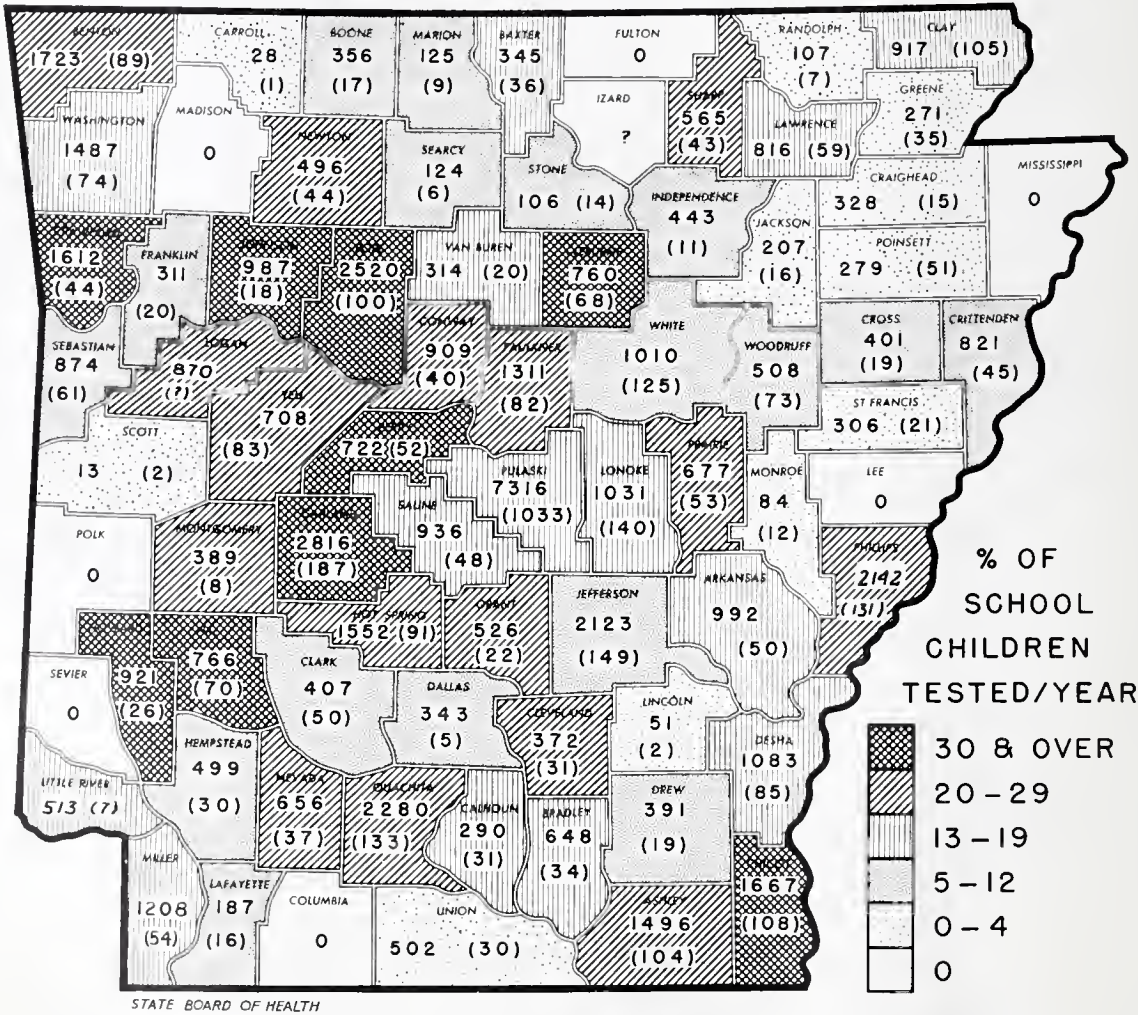
Under the guidance of a committee from the Eye, Ear, Nose, and Throat Section of the Arkansas Medical Society, the State Health Department established

standards and referral criteria for vision screening tests.

The Massachusetts Vision Test Kit was adopted as the test instrument. This test, which was accepted by the Council on Physical Medicine, American Medical Association, was chosen because it is designed to detect the more common eye problems of school-age children and because of its simplicity and the relative ease with which it can be administered, even to first graders. The first and second parts of the test use a lighted, sim-

\*Sponsored by the Arkansas State Board of Health.

## VISION SCREENING PROGRAM IN ARKANSAS SCHOOLS





plified Snellen chart with "E" symbols turned in four directions. In the first part of the test the child attempts to read the "E" symbols at a distance of 20 feet. This tests for myopia and also detects some severe cases of astigmatism. In the second part, testing for hyperopia, the child puts on a pair of glasses (+2.25 diopters for 1st and 2nd graders; +1.75 diopters for 3rd through 12th graders) and attempts to read the "E" symbols. The last part of the test employs a simplified Maddox rod test for muscle imbalance and tests both horizontal and vertical phoria at distance and vertical phoria at near-point.

Schools requesting a vision screening program must agree to furnish selected lay volunteers and a suitable place with controlled lighting. The Division of Maternal and Child Health furnishes supplies and a Massachusetts Vision Test Kit, which is lent to the school free of charge.

Consultants from the Division of Maternal and Child Health train the local Public Health Nurse and the volunteers to administer the test. Children who fail the initial test are retested about two weeks later. Those failing the second time are referred, by means of a letter to the parents, for a complete professional eye examination. It is requested that the results of this examination be returned to the school with any special instruc-

tions to the teacher regarding seating, lighting, wearing of glasses, etc.

Special care is taken to impress upon school officials, teachers, parents, and the children the fact that the vision screening test is by no means complete and that when the child passes the test there is no assurance that he does not have a problem with vision or will not have one. Furthermore, some children who fail the test at school may be found upon professional examination, to be without vision problems. Every effort is made to avoid unnecessary referrals.

In conjunction with the screening program, schools are urged to teach a unit on the eyes and their care.

Since the beginning of this program, reports have been received showing that 434,497 vision tests have been given under the direction of the State Health Department. Of this number, 34,639 were test failures which resulted in referral. These totals do not include the 1957-58 school year for which reports are not complete. Both of these figures include some children who have received the test more than one time during the past ten years. Some schools have failed to submit reports. Also, some schools have purchased their own vision screening equipment and do not send reports to a central agency.

## The Older Citizens

R. B. ROBINS, M.D.\*

In recent years, the problems of the elderly have attracted an ever-increasing amount of national attention, both within the government and among groups and associations outside government. This is understandable since the proportion of our population over age 65 is increasing at a rate that might be described as amazing. In 1900 there were only 3,000,000 of these elderly citizens. Now there are approximately 15,000,000. Already they represent nearly nine per cent of our entire population, and the trend has not leveled off.

Not one but many factors have been increasing the life span — (1) advances in medical science; (2) a new awareness of the principles of nutrition; (3) better working conditions; and (4) better housing.

The doctors are deeply concerned regarding the problems of the older citizens. The American Medical Association has three active committees at work on the medical aspects of caring for the aged and a majority of state medical societies have formed committees on aging and are making their contributions. Recently the

American Medical Association, the American Hospital Association, the American Dental Association and the American Nursing Home Association have formed a "Joint Council to Improve the Health Care of the Aged." This council's long-range goal is better health care for all the aged. Its immediate concern is working out answers to meet the financial and social problems that accompany chronic illness. These organizations do not feel that Congressman Forand has the correct solution in his proposed legislation to give socialized medical care to these people.

The writer recently testified before a Senate Committee urging legislation providing FHA-type loans — *not grants* — for nursing homes and other facilities for the aged so that new ones could be built and present ones could expand their facilities. Banks and the normal lending agencies just are not interested in making long term loans to these institutions. It is our feeling that this is a positive, a constructive and an American way to render help in this field of endeavor which we as doctors and citizens must face.

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\*Camden, Arkansas.



## Medicine in the News

(From the Arkansas Gazette, Wed., July 23, 1958)

### House Group Okays Special Tax Relief Bill

Washington, July 22 (UPI) — The House Ways and Means Committee gave its final approval today to a bill to grant a special tax break to self-employed persons trying to build retirement funds for their old age.

The measure, which won tentative approval last week, was approved 18-7, despite strong Treasury Department opposition and charges that it ignored millions of other Americans who do not belong to pension systems.

Chairman Wilbur D. Mills (Dem., Ark.), and six other Committee members lined up against the bill, indicating that it may face rough going on the House floor. Even if it passes the House, it stands a good chance of getting lost in the Senate in the adjournment rush. That would force sponsors to start all over again next year with a new bill.

### Washington County Mental Clinic Declared Advisable

The need for a mental health clinic in Washington County is evident it was decided at a meeting recently of the Mental Health Association in Fayetteville. Several speakers were heard at the session. Those who discussed the matter included Mrs. Claude Wilson, who teaches a class for exceptional children in the Fayetteville schools; Dr. Kessell Schwartz of the University of Ark.; Dr. Joe Hall of the Washington County Medical Society; Mrs. Willard Lee, child welfare worker; Sheriff Hollis Spencer and Mrs. Fred Hannah of the Welfare Department. Dr. Wilma Sacks, medical director for Washington and Benton Counties, presided.

### Cleveland County Memorial Hospital Reopening

Hospital facilities are again available at the Cleveland County Memorial Hos-

pital. Due to the lack of sufficient number of physicians during the past three years, the hospital has been closed. It was closed in November, 1954. Plans to open the 18-bed hospital were announced in May by the board when two physicians, Dr. James Arthur Brown of Fort Smith and Dr. Barbara Anne Barksdale of Little Rock, said that they would open offices there. Since that time the hospital board has had the building redecorated and repaired. Dr. Brown and Dr. Barksdale are both 1956 graduates of the University of Arkansas School of Medicine.

### Committee Drafting Social Security Bill

The Ways and Means Committee expected to finish executive hearings July 18 or early the next week on a social security bill, then hurry it on its way to the House in hope of enactment before adjournment. It is understood that the Democratic Congressional leadership has decided to get the bill through this session if at all possible. An increase of 8 to 10 per cent in social security payments is in sight, with a minimum boost of \$5. The cost would be met by taxing \$600 more of earnings, and there is some possibility that the rate itself will be increased a quarter of one per cent. There would also be a corresponding increase in public assistance benefits, if the pattern of other years is followed. There have been no indications that the Ways and Means Committee is considering the Forand plan for hospitalization under social security.

### Committee Acts Favorably On Jenkins-Keogh Bill

Chairman Wilbur Mills has announced that the House Ways and Means Committee has agreed to favorably report a Jenkins-Keogh bill to permit self-employed to defer income taxes on money placed in retirement funds. He said formal committee action would come in a few days, and that he expects a "large majority" of the committee to vote for the bill.

This is the most encouraging action Congress has yet taken on this legislation,

which has long been sought by the American Medical Association and many other groups representing the self-employed. Their efforts have been concentrated in the American Thrift Assembly, formed for the purpose of working for passage of the bill.

While this action represents substantial progress, it must be remembered that there is no assurance the bill will pass the House and Senate in the time remaining before adjournment. There is a big backlog of bills that must be acted on and Congress hopes to adjourn by August 15.

The committee agreed to the following provisions in the bill, and will report out the measure for House action next week, according to Mr. Mills:

1. Self-employed persons will be the only group to benefit.
2. Set-aside can be up to 10 per cent of earned income, but not to exceed \$2,500 in any one year.
3. Annuity plan to be limited to a 20-year period, resulting in a maximum program of \$50,000.
4. If the money is withdrawn before age 65, there would be a 110 per cent tax penalty.

### Federal Medical Services Newsletter Discusses Cost of V. A. Care

The VA's own figures indicate that General Medical and Surgery patients have an average stay of 30.2 days, about four times the average for private General Medical and Surgery hospitals. Even with a VA per diem \$13.97, ten dollars less than the \$24.12 for all private General Medical and Surgery hospitals, this would result in a total VA cost 2¼ times that of the private hospital.

COST PER CASE, VA AND NON-FEDERAL HOSPITALS  
(By type of hospital)

Type of Hospital	V.A.	Non-Federal Hospitals		
		Private	Government	All
All hospitals .....	\$ 928.19	\$ 190.59	\$ 444.22	\$ 258.27
Tuberculosis .....	1975.99	2164.60	2648.14	2595.39
Neuropsychiatric .....	4542.14	756.68	3316.12	2540.64
General medical & surgical-spec. ....	589.53	185.72	236.85	194.27
Short-term .....		178.49	207.55	185.96
Long-term .....		1350.00	1350.05	1350.48*

\*Slightly higher than private and government rate due to rounding of figures.

### Jenkins-Keogh Plan Delayed

Progress of Jenkins-Keogh legislation through the House Ways and Means Com-

mittee has run into some delay. After the committee last week agreed on the bill's provisions, and Chairman Mills predicted early approval, the committee staff found that more time was required to iron out all the details.

### Defense, Service Witnesses Complete Medicare Testimony

Witnesses for the Defense Department and the three services have completed testimony before the Senate appropriations subcommittee on the Medicare budget for the fiscal year that started July 1. All asked for restoration of \$12 million cut from Medicare funds by the House and for deletion of a House-imposed ceiling of \$60 million for the civilian phase of the program.

At the same time the witnesses reiterated for the Senators a pledge to channel more dependents to military facilities. They proposed one or more of the following devices: Require those living on posts or in military housing near posts to use service hospitals, increasing the fee charged dependents who use civilian facilities, and limiting amount of elective surgery authorized in civilian facilities.

### Eye Foundation and AMA Disagree with Optometrists

The National Foundation for Eye Care and the American Medical Association are opposing a proposal of the American Optometric Association to authorize optometrists to make examination for blindness in all government programs. Following testimony by the optometrists to the House Ways and Means Committee, both professional groups sent letters to Chairman Wilbur Mills. The foundation repeated the argument that every time a person is declared blind by an optometrist alone, a chance is lost to determine the true medical cause of the blindness and to appraise chances of rehabilitation or cure.

### AMA Renews Efforts for Nursing Home Mortgage Guarantees

American Medical Association has renewed its efforts to convince Congress that proprietary nursing homes should have the benefit of federal mortgage



## FEATURES

guarantees. Dr. R. B. Robins, who earlier testified before a Senate subcommittee, today asked the housing subcommittee of the House Banking and Currency Committee to act favorably on legislation that already has passed the Senate.

Dr. Robins pointed out that financing the medical care of the aged was a serious problem, and that one of the answers was the construction of high quality nursing homes where the aged could

receive necessary medical care yet avoid high costs of hospitalization. He reviewed work done by the AMA over the years to improve the medical care of the aged, and explained how the Association was participating in the activities of the Joint Council to Improve the Health Care of the Aged. Other members are the American Hospital Association, the American Dental Association and the American Nursing Home Association.

### LEGISLATIVE BOXSCORE, 85th CONGRESS, 2nd SESSION

July 11, 1958

This boxscore is designed to bring you up to date on the more important health measures pending in Congress. The tempo of legislative activity is expected to increase from now until adjournment. A summary of most of the bills listed here is contained in Special Report 85-9. Bills not enacted into law die with this Congress; many of them will be introduced anew in the 86th Congress convening next January.

SUBJECT	BILL NO.	HOUSE	SENATE
Public Works Loans	S. 3497	Reported 6/6	Passed 4/16
Civilian Pay (VA Doctors)	S. 734	Public Law 85-462, June 20	
Military Pay	H.R. 11470	Public Law 85-422, May 20	
Pub. Health School Grants	H.R. 11414	Passed 5/5	Passed 7/10
HEW Appropriations	H.R. 11645	Passed 3/27	Passed 6/20
Union Health Plans	S. 2888	In Committee	Passed 4/28
Medical Care for Aged (Forand Bill)	H.R. 9467 and others	Hearings 6/16 to 6/30	
Med. School Aid	H.R. 6874 S. 1917	Hearings Held	In Committee
Chemical Additives	H.R. 13254 S. 1895	Hearings Held	In Committee
Aging Conference, Bur. Older Persons	H.R. 9822 and others	Hearings Held	
Jenkins-Keogh Taxes	H.R. 9 and 10 S. 3194	Hearings Held	In Committee
Hill-Burton Extension	H.R. 12628		
Hill-Burton Loans	H.R. 12694	Passed 6/26	In Committee
Civil Aviation Medicine	S. 1045 H.R. 4275	In Committee	Hearings Held
Merger ODM-FCDA	Reorg. Plan No. 1	Into effect on July 1	
Defense Reorganization	H.R. 12541	Passed 6/12	Hearings Held
Medicare Appropriations	H.R. 12738	Passed 6/5	Hearings Now On
Nursing Home Loans	S. 4035		Reported 6/19
Presumption of Service Connection	H.R. 413 (Hansen's)	Passed 7/7	
Research Facilities	H.R. 12876	In Committee	

**NO ACTION:** Grants and Scholarships for Nursing (H.R. 306); National Compulsory Health Insurance (H.R. 3764); Health Insurance Pooling (H.R. 6506 and H.R. 6507); Public Assistance Amendments (H.R. 10730 and H.R. 11703); Rehabilitation (H.R. 10608 and S. 3551).

### State Commission Proposed To Police Insurance Firms

The Arkansas Legislative Council committee recommended several ways of strengthening the state's control over insurance companies recently, including the establishment of a three to seven-member Insurance Commission.

The Corporations, Insurance and Banking Committee made the recommendations after hearing an El Dorado physician list several instances of suspected fraud involving hospitalization, health and accident policies sold in the state.

Other measures suggested by Representative Marcus J. Howell of Phillips County and adopted by the Committee for recommendation to the full Council were:

(1) To lend the full support of the Council to the state Insurance Department's plan to recodify the state's confusing, inadequate and in some instances conflicting insurance laws.

(2) To establish a schedule of minimum benefits for the health and accident policies.

(3) To work for a licensing law with an examination requirement for agents of those companies, similar to the regulations now applicable to general insurance agents.

#### Doctor Main Witness

Dr. Sam G. Jameson, chairman of the Insurance Committee of the Arkansas Medical Society, was the principal witness to appear at the meeting at the Capitol.

### State Universities Oppose Nuclear Insurance

Twenty-three universities in 18 states are backing legislation to exempt them from buying liability insurance for nuclear reactors. A Joint Atomic Energy subcommittee held hearings July 9 on several bills introduced to ease the Atomic Energy Commission requirement for state schools. In some cases, witnesses said, changes in state constitutions to allow schools to get such insurance would take 2 or 3 years. Major bill on the subject is H. R. 13190 by Rep. Melvin Price (D., Ill.). State medical schools would be involved in some states. An AEC official testified that as yet it had no policy

on the bill, which is still before the Budget Bureau.

### AMA Opposes Forand Bill at House Hearings as Unnecessary, Risky

Testifying before the House Ways and Means Committee today, two witnesses for the American Medical Association opposed the Forand hospitalization-surgical care amendment to the social security program as unnecessary, of unpredictable cost, and as pointing the way to a complete program of socialized medicine. Witnesses were Drs. Leonard Larson, an AMA trustee, and Frank Krusen of the Mayo Clinic.

Dr. Krusen made it clear that the AMA has not and is not now opposing social security, but that it has and is opposing such proposals as the Forand bill, which "represent in our opinion a major and dangerous deviation from the original concept of the system." Dr. Krusen then made these points, among others:

1. The aged, for the most part, do not need short stays in general hospitals but rather improved home and community care, "as well as less costly and improved chronic illness and nursing home facilities."

2. The AMA on its own and through the Joint Commission to Improve the Health Care of the Aged is attacking the problems of furnishing medical care to the aged, and is supporting legislation for federal mortgage guarantees for proprietary and other hospital and nursing homes to reduce costs.

3. Under the Forand bill the government would (a) finance health care of millions through compulsory taxes, (b) control the funds, (c) set benefits and rates of compensation, (d) establish and enforce hospital and medical care standards.

4. Patient and physician alike would have to submit to Federal regulations, and patients would not have free choice of physician.

5. Medical efforts alone will not solve the problems of the aged; many other segments of our society will have to contribute, as many of their ills are the direct result of the inferior role in which



this group has been placed. He added: "We as physicians are going to find out what the aged really need; what new improvements are succeeding in giving them better health care and how such procedures can be universally applied."

### **Defense, Medicare Officials Defend Program**

Officials of the Defense Department and Medicare itself have urged Congress to retain the civilian phase of the program and with sufficient appropriations. At the same time the military spokesmen promised to put into effect limited restrictions on the free choice of physician and hospital. Testimony before the defense subcommittee of the Senate Committee on Appropriations was given by Dr. Frank B. Berry, Assistant Defense Secretary for Health and Medical affairs, and Major Gen. Paul I. Robinson, executive director for Medicare. They asked the committee to lift House-imposed restrictions that would forbid use of more than \$60 million for the civilian phase of Medicare. They pointed out that this restriction would virtually demolish Medicare.

Instead, the military spokesmen proposed three ways of increasing use of military facilities by dependents, (a) commanders to require those on reservations or nearby government-sponsored housing to use available military facilities, (b) elimination of certain types of medical care now authorized in civilian facilities, to encourage use of military, and (c) possibly increasing the monetary liabilities of dependents in civilian facilities, also designed to turn dependents to military hospitals.

### **AMA Asks Congress to Retain Top Medical Post in Defense**

American Medical Association is appealing to Congress to reject a Defense Department reorganization plan that would down-grade the post of Assistant Secretary (Health and Medical) to that of assistant to the Secretary. The Assistant Secretary position, strongly supported by the AMA and other professional associations, was established when the department was reorganized in 1953.

### **Rep. Harris Spoke to House at Breakfast**

The Arkansas Medical Society played host at a breakfast to officers of the American Medical Association and members of the House of Delegates in the Gold Room of the Sheraton-Palace Hotel in San Francisco in June.

Rep. Oren Harris of Arkansas addressed the 300 physicians who attended. He is chairman of the House Committee on Interstate and Foreign Commerce, which considers all health legislation.

Six AMA officers — David B. Allman, Gunnar Gundersen, F. J. L. Blasingame, George F. Lull, E. Vincent Askey and Louis M. Orr — received the famous Arkansas Traveler certificates. They were presented by Dr. R. B. Robins, Arkansas delegate to the AMA and AMA vice president in 1950-51.

Dr. L. K. Hundley of Pine Bluff, president of the Arkansas Medical Society, presided and the convocation was given by Dr. L. H. McDaniel of Tyronza.

### **VA Medical Care Hearings Open: Whittier Wants New Law**

Veterans Administrator Sumner G. Whittier in a lengthy presentation to the House Veterans Affairs Committee made a strong plea for a law clearly spelling out who is entitled to VA hospital and medical care, instead of depending each year on availability of funds, first from the Budget Bureau and then Congress. A central issue is that of non-service-connected care which now is based on admitting veterans unable to pay for civilian care and where VA beds are available. VA estimates that by 1986 the number of N-S-C cases will jump from 148,000 to 304,000.

Commented Mr. Whittier: "No service-connected veteran is ever denied a bed . . . Our only problem is how far do we go in the care of non-service-connected veterans."

### **Scores of Liberalizations in Social Security Program**

The House Ways and Means Committee is about to close hearings on social security, after listening to two weeks of concentrated testimony from witnesses

who proposed liberalizations in every phase of the program. Comments of Chairman Wilbur Mills (D., Ark.) and committee members suggest the legislation to be reported out later will be limited to a few subjects. Most prominently mentioned are increases in public assistance and OASI monthly payments, an increase of \$600 on the ceiling of taxable income, and improvement of some of the public assistance rules. The Forand bill for hospital-nursing home care of beneficiaries continues to be a controversial subject, but there are no solid indications as to how the committee will act on it.

### **AMA Appeals to Senators to Lift Medicare Restrictions**

American Medical Association is continuing its effort to preserve the civilian Medicare program. Latest move was testimony before a Senate Appropriations subcommittee, with Dr. Hugh Hussey, a trustee and dean of Georgetown Medical School, a witness. The problem arose when the House cut Medicare appropriations to \$60 million in the face of estimated cost of \$90 million, and instructed the Defense Department not to use other funds for this purpose.

### **Highlights from the San Francisco Meeting**

#### **Social Security Coverage**

In considering seven resolutions dealing with the inclusion of self-employed physicians under the Social Security Act, the House of Delegates of the AMA disapproved of three which called for polls or a referendum of the AMA membership, one which favored state-by-state participation in Social Security, and two which called for compulsory inclusion on a national basis. Instead, the House adopted a resolution pointing out that "American physicians always have stood on the principle of security through personal initiative," and reaffirming unequivocal opposition to the compulsory inclusion of self-employed physicians in the Social Security system.

On the question of polls, the House expressed the opinion that any poll should

be taken on a state-by-state basis and the results transmitted to the AMA delegates from that state. It also pointed out that since there is no provision in the Constitution and Bylaws for a referendum of members, such a referendum would usurp the duties and prerogatives of the House of Delegates, which is the Association's policy-making body.

#### **Veterans' Medical Care**

Pointing out that the Federal government spent \$619,614,000 on hospitalized medical care of veterans in VA hospitals in 1957, of which about 75 per cent had non-service-connected disabilities, and that ways and means of obtaining economy in Federal government are allegedly being sought by Congress at this time. The AMA House of Delegates urged Congressional action to restrict hospitalization of veterans at VA hospitals to those with service-connected disabilities. It also recommended that the American Medical Association suggest to the Dean's Committees that they restrict their activities to Veterans Administration hospitals admitting only patients with service-connected disabilities.

#### **The Medicare Program**

In disapproving a resolution calling for repeal, modification or amendment of Public Law 569, the AMA House of Delegates took the position that desired changes in the Medicare program could be accomplished through modification of the present implementing directives without the necessity for new legislation. The AMA House of Delegates reaffirmed the action taken last year in New York recommending that the decision on type of contract and whether or not a fee schedule is included in future contract negotiations should be left to individual state determination. Also reaffirmed was the Association's basic contention that the Dependent Medical Care Act as enacted by Congress does not require fixed fee schedules; the establishment of such schedules would be more expensive than permitting physicians to charge their normal fees, and fixed fee schedules would ultimately disrupt the economics of medical practice.



## Report on Hill-Burton

Results of a two-year study of the Hill-Burton Hospital Survey and Construction Program is available in booklet form from the Committee on Medical and Related Facilities of the AMA's Council on Medical Service. In addition to reviewing the legislative background of the Act and a voluminous amount of other data, reports on field surveys made in Arkansas are included.

## AMA to Publish Work Absence Guide

The AMA's Committee on Medical Care for Industrial Workers (a joint committee of the Councils on Medical Service and Industrial Health) currently is working on a "Guide for Measuring Work Absence Due to Illness and Injury." In an effort to obtain additional data for such a booklet, the Committee will publish a "preliminary guide" which will be used in field surveys and will be mailed about August 1 to companies, individuals interested in the subject, and medical societies. Medical societies may send information on their activities in this area to the Committee.

## Consultants Propose \$1 Billion A Year for Medical Research

The nation should treble its expenditures for medical research and double its output of physicians in the next 12 years, in the opinion of an advisory committee that has just made its report to Secretary Folsom. Chairman of the group was Dr. Stanhope Bayne-Jones, former Yale medical dean and former head of the joint administrative board of New York Hospital-Cornell Medical Center. Other members were medical educators and research directors in private industry.

## Conferees Vote Record \$294 Million For Institutes of Health

Senate-House conferees July 17 agreed on a budget for the Department of Health, Education, and Welfare, including record high appropriations for the Institutes of Health. The money bill will come up for final action in Senate and House immediately; approval is expected without change. Here are the major provisions: A total of \$294 million for the Institutes,

or 75 per cent more than the House had proposed; \$186 million for the Hill-Burton hospital construction program in contrast to \$121 million proposed by the House (diagnostic-treatment centers and chronic disease hospitals were cut from the Senate's \$20 million to \$7.5 million each, but Senate figures were accepted for rehabilitation centers and nursing homes, \$10 million each); \$6.9 million to build a National Library of Medicine and \$9.6 million to build an office building at NIH. Rounded off figures approved for the various institutes (in millions of dollars) are general research 29, cancer 75, mental health 52, heart disease 45.6, dental research 7.4, arthritis 31, allergy and infectious diseases 24, and neurology and blindness 29.

## Doctors' Appeal for Radio Frequencies Temporarily Rejected

Separate requests by American Medical Association and American Hospital Association for exclusive radio frequencies for use of physicians and hospitals have been temporarily rejected by the Federal Communications Commission in one classification, but a FCC spokesman said their overall appeals still are under consideration with the possibility they eventually will be made eligible in several other classifications. In the same ruling the FCC set up a new classification, "Business Radio Services," and made doctors and hospitals eligible for frequencies in it. However, under these conditions the medical profession would have to compete with all community businesses for the frequencies. They are also eligible in the "Special Emergencies" and "Citizens Radio" classifications, but under restrictions and competitive conditions that would not make these frequencies attractive to doctors or hospitals. The AMA and AHA still have a right to make a new appeal for frequencies in the "Industrial Radio Services" category, in which their original request was denied.

## Dr. Larson Will Concentrate on Solving Aged Health Problems

During his tenure as chairman of the American Medical Association's Board of Trustees, Dr. Leonard Larson will con-

concentrate on finding solutions to the problems of providing medical care to the country's aged. Dr. Larson made the declaration while testifying before the House Ways and Means Committee in opposition to the Forand bill, which would provide hospitalization under social security. Dr. Larson, elected board chairman earlier in the week, said in reply to a question by Rep. Aime J. Forand, the bill's sponsor:

"As chairman of the Board of Trustees I shall devote all my energies to solving this problem and other problems of medical care plans in general. This is my primary interest. I rise or fall on what happens in this field."

### **AMA Conducts Nursing Home Study**

A field survey of approximately 25 skilled nursing homes in various sections of the country is being conducted this summer by the AMA's Council on Medical Service. Primary purpose of visits to these public, proprietary and non-profit facilities will be to obtain data that will aid in developing recommended guides and standards governing medical care in nursing homes. It is expected that much valuable information will be gathered on other important phases of nursing home operation — including nursing care, social service, food service, staffing and personnel policies, and costs. Tentative plans call for publishing the results of the survey, along with suggested standards for medical care and supervision, this fall.

### **House Veterans Committee Delving Into Hospital Entitlement**

The House Veterans Affairs Committee started hearings July 8. Ostensibly, they were called to determine the legal basis for the Veterans Administration action in withdrawing nearly 5,000 beds from use. This will open the broad field of veteran entitlement and conceivably could produce legislation setting a statutory ceiling on the number of beds (one figure mentioned is 125,000 beds) and also spelling out eligibility.

Chairman Teague (D., Tex.) wants answers to a long list of questions he has addressed to VA Administrator Whittier. They include plans for long-term care of

chronic patients. In this connection, VA estimates that by 1986 service-connected cases will fall off to around 23,600 as against the 1957 level of 39,000. During the same period, non-service-connected cases in all hospitals are expected to rise from 150,000 to 300,000.

A clear-cut policy statement from Congress on who is entitled to VA care has been long advocated by the American Medical Association. AMA feels that the provision of medical care for veterans with non-service-connected disabilities is unsound and that final consideration of their care must be predicated on a concern for the health and welfare of the entire population. The existing authority on eligibility for hospital and domiciliary care is subject to differing interpretations and results in frequent clashes between Congress on one hand and the executive agencies particularly the Budget Bureau, on the other.

### **AMA Adopts New Code for Doctors and Lawyers**

A new "National Interprofessional Code for Physicians and Attorneys" was approved by the AMA's House of Delegates at its Annual Meeting in San Francisco. The Code will serve as a suggested guide for physicians and attorneys in their inter-related practice in the areas covered by its provisions — subject to the principles of medical and legal ethics and the rules of law prescribed for their individual conduct.

### **Supreme Court Rules Against FTC on Insurance**

The Federal Trade Commission has lost ground in its campaign against accident and health insurance advertising. The Supreme Court in a unanimous decision held that FTC has no jurisdiction over such advertising in states that have their own laws on the subject — even though such laws are not being enforced. Cases on the subject had been appealed by the American Life Convention, the Life Insurance Association of America and the Health Insurance Association of America. The law authorizes federal regulation in this area only where states have not entered the field. FTC argued that in this instance the states with regula-



tory laws were not applying them. The court pointed out that the states in question have prohibitory legislation and that failure on their part to enforce it was not sufficient ground to use federal law.

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## ANNOUNCEMENTS

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### Program on Hypnosis

The Society for Clinical and Experimental Hypnosis, an International Scientific Society, comprised of physicians, dentists and psychologists engaged in the clinical use of hypnosis, will present an outstanding scientific program in Chicago at the Morrison Hotel, October 29-31, 1958.

The program will include Breakfast, Seminars, Round-table Luncheons, Panel Discussions and Formal Presentations.

### Doctors from Six Universities To Discuss Infectious Diseases

Six medical schools will send top speakers to the Second Annual Symposium on Infectious Diseases.

The one-day symposium, jointly sponsored by the American Academy of General Practice, Kansas University Medical Center and Lederle Laboratories, will be held Friday, September 19, at Battenfeld Auditorium on the medical center campus, Kansas City, Kan.

### Psychiatric Meeting

The annual meeting of the Mid-Continent Psychiatric Association will be held at the Lassen Hotel in Wichita, Kansas, on September 12, 13 and 14, 1958.

### 44th Annual Clinical Congress, American College of Surgeons

The 44th annual Clinical Congress of the American College of Surgeons will be held in Chicago, October 6-10, 1958. Headquarters will be The Conrad Hilton.

More than 10,000 surgeons, physicians, students and related medical personnel will attend this largest meeting of surgeons in the world to keep informed on progress in surgery through postgraduate

courses, research forums, panel discussions, closed-circuit operation telecasts, medical motion pictures, cine clinics, and exhibits.

### Tennessee Valley Medical Assembly

The Chattanooga and Hamilton County Medical Society will sponsor the Tennessee Valley Medical Assembly at the Read House, Chattanooga, Tenn., September 29 and 30, 1958.

### Specialty Meeting

The University of Oklahoma Medical Center is conducting a postgraduate program timed to coincide with the Oregon-Oklahoma Football game October 3-4, 1958. For further information write Office of Postgraduate Education, University of Oklahoma Medical Center, 801 Northeast 13th Street, Oklahoma City 4, Oklahoma.

### Postgraduate Course

Preceding the American Fracture Association Meeting September 30-October 2, 1958, the University of Oklahoma Medical Center is sponsoring a postgraduate course on orthopedic surgery and fracture September 29, 1958.

### International college of Surgeons

The International College of Surgeons will hold its fourth Around-the-World Postgraduate Clinic and Lecture Tour, beginning with departure from San Francisco on October 10. The return to New York will be on December 3. Further information may be had by writing to Dr. Arnold S. Jackson, 16 South Henry Street, Madison 3, Wis.

Another postgraduate course in surgery will be presented by the United States Section of the International College of Surgeons in conjunction with the Cook County Graduate School of Medicine, Chicago, October 13-25.

Further meetings will be a Southeastern regional meeting in Miami Beach, January 4-7, 1959, and the Japan Section — Fifth annual congress, in Hiroshima, Japan, November 2.

## PERSONALS AND NEWS ITEMS

**Dr. Myron D. Lecklitner** became medical director of Hot Springs National Park Physical Medicine Center July 1. He succeeded **Dr. Howell Brewer**, who had held the post since the Center opened January 15, and who has returned to Memphis.

It has been announced by **Dr. J. S. Priddy** of Green Forest that **Dr. Oliver Wallace** will be associated with him in the practice of medicine. Dr. Wallace has been practicing medicine in Mulberry for the past year.

**Dr. James W. Headstream**, Little Rock, announces the association of **Dr. B. W. Jones** in the practice of urology.

A new physician has been added to the medical staff of the North Arkansas Clinic Hospital in Batesville. He is **Dr. Olen W. Bridges**.

Two new doctors in specialized fields have joined the St. Bernard's Hospital medical staff. They are **Dr. Eldon L. Caffery**, urologist, who has been assistant professor of urological surgery at the Medical College of Georgia since 1956, and **Dr. George E. Mitchell**, anesthesiologist, who has been doing residency work at St. Joseph Hospital, Joliet, Ill., for the past two years.

**Dr. Sam Watson**, formerly of North Little Rock, has moved to Springdale where he is now associated with the Springdale Clinic.

The DeQueen Clinic has announced the addition of **Dr. James J. Greenhaw** to their staff. Dr. Greenhaw served his internship at the University of Arkansas Medical Center.

The following members were registered at the AMA convention in San Francisco June 23-29; **EVA DODGE**, Little Rock; **D. W. Goldstein**, Fort Smith; **Lewis Henry**, Fort Smith; **Louise Henry**, Fort

Smith; **Joseph A. Norton**, Little Rock; **Euclid M. Smith**, Hot Springs; **James W. Branch**, Hope; **G. R. Siegel**, Clarksville; **L. K. Hundley**, Pine Bluff; **James M. Kolb**, Clarksville; **L. H. McDaniel**, Tyronza; **Gordon P. Oates**, Little Rock; **Perry J. Dalton**, Camden; **R. E. Glasscock**, Pine Bluff; **Joseph Hickey**, Little Rock; **Sam G. Jameson**, El Dorado, **Tom J. Meek**; **H. A. Ted Bailey, Jr.**, Little Rock; **R. B. Robins**, Camden, and **Mr. Paul Schaefer**, Fort Smith.

**Dr. and Mrs. Harry E. Murry** were so impressed with the beautiful sights on their recent trip around the world that Dr. Murry organized a project in his Kiwanis Club to beautify Texarkana. His interest has resulted in a "Beautiful Texarkana Association." Dr. Murry was elected president of the association and the work is going ahead rapidly.

### Answer—What's Your Diagnosis?

Age	Race	Sex
3	C	M

#### CLINICAL DATA:

Admitted to hospital on four occasions in congestive heart failure and anemia. Responded on each occasion through digitalization diuretics and transfusions. Patient had a chronic cough and vomited with his acute episodes.

#### LAB DATA:

Anemia. Otherwise essentially negative. All tests for fibrocystic disease were negative.

#### SURGERY:

Lung biopsy.

#### PATHOLOGY:

Reported as chronic passive congestion of lung.

#### X-RAY FEATURES:

Chest. Examinations extending over 18 mo. period show intermittent congestive failure associated with a rather diffuse infiltrate, most pronounced at the right base. There is definite change in the appearance of the infiltrate from one examination to the next. This is felt to be due to the intermittent hemorrhage within the lung parenchyma and resultant deposition of hemosiderin.

#### DIAGNOSIS:

Idiopathic Pulmonary Hemosiderosis

\*University of Arkansas Medical Center Department of Radiology.



Dr. Nathan Morris, formerly of Little Rock, is now at the Piggott Clinic for the practice of general medicine and surgery. Dr. Morris goes to Piggott from the Veterans Administration Hospital in Little Rock.

Joining Dr. George H. Wright at Hope for the practice of medicine and surgery is Dr. Forney Holt.

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## Proceedings of Societies

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Dr. Thomas Johnston of Little Rock spoke on "Drug Allergy" at the monthly dinner meeting in June of the Columbia County Medical Association held at Martel's Lakeside Lodge in Magnolia. The members of the association discussed the proposed rest home for the aged in Columbia county.

The Union County Medical Society presented its annual seminar on trauma Sunday July 20, 1958, by the faculty of Baylor University College of Medicine. The meeting was held at the Petroleum Club, Randolph Hotel Building, in El Dorado. Guest speakers were Keith Bradford, M. D., Clinical Associate Professor of Neurosurgery and head of the Division of Neurosurgery; E. Stanley Crawford, M. D., Assistant Professor of Surgery; S. Baron Hardy, M. D., Professor of Plastic Surgery and Head of the Division of Plastic Surgery; George H. Lane, M. D., Clinical instructor in Orthopedic Surgery; James D. McMurrey, M. D., Assistant Professor of Surgery; and Russell Scott, Jr., M. D., Instructor in Urology.

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## Woman's Auxiliary

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The Pope-Yell County Medical Society met in June and new officers were installed. They are: president, Mrs. Charles F. Wilkins; vice-president, Mrs. Douglas Lowrey; secretary, Mrs. Martin Heidgen; and treasurer, Mrs. Max Mobley. Mrs. Ernest King was hostess.

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## BOOK REVIEWS

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**A GUIDE TO HUMAN PARASITOLOGY.** T. H. Davey. The Williams & Wilkins, Co., Baltimore, exclusive U. S. agents. P. 222. 1958. \$7.00.

This book is well organized and to a large extent is written in outline form; this has an attraction in that it reduces the text length somewhat and also makes for a little easier reference work. On the other hand, reading a book of this type is somewhat difficult. The book contains a few color illustrations and a great number of excellent black and white sketches. Near the end of the book are a series of sketches depicting the life history of helminths. These are excellent. As would be expected in this type of text, the emphasis is on diagnosis rather than treatment. The reviewer feels that therapy should be included in the study of parasitology. The book is generally good and is recommended.—AK

**FAT CONSUMPTION AND CORONARY DISEASE.** T. L. Cleave. Philosophical Library, New York. Pages 38. \$2.50.

This brief book of 38 pages discusses the relationship between fat consumption and coronary disease. The author espouses two principal ideas: one to eat foods in their natural state and secondly to eat these foods in strict proportion to the appetite. The author arrives at these conclusions after studying the work of Dr. Ancil Keys and others. There is really nothing new in this book nor other conclusions very startling.—AK

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## TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

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### Clinical Experience with 682 Cases of Asian Influenza.

*Lawrence S. Greene, Lieutenant, MC, USNR, Thomas E. Hair, Jr., Lieutenant, MC, USNR, United States Armed Forces Medical Journal, March, 1958.*

- 
- A study of 682 cases of Asian influenza provides convincing evidence that influenza may be recognized easily and accurately by clinical means.
- 

Influenza has affected mankind with varying intensity for many years, but only since the epidemic of 1933, when type A influenza virus was isolated, has this dis-

ease yielded to accurate laboratory as well as clinical diagnosis. In April 1957 influenza once again began one of its characteristic peregrinations spreading rapidly from Asia to Europe and the United States, and eventually involving most of the world. the causative virus of this "Asian influenza" was identified as A/Japan/305/57.

The clinical material herein presented concerns 682 cases of Asian influenza seen during October and November 1957 in an epidemic characterized by sudden, dramatic onset in a select population of previously active, healthy, military personnel.

*Symptoms.* The distribution of symptoms encountered in the 651 uncomplicated cases of influenza appear to be non-specific, but distinct individual characteristics of the following six symptoms were easily discernible and contributed greatly to the facility with which the clinical diagnosis could be made:

*Headache*, characteristically dull, severe, and unremitting, located frontally or retro-orbitally, and often associated with marked somnolence, was a repeated complaint.

*Fatigue*, overpowering in nature, completely incapacitating healthy young men.

*Cough*, typically dry, irritating, and non-productive was characteristic.

*Chills*, more correctly frank rigors, was a dependable, readily recognized symptom.

*Ocular pain*, aggravated by any and all motion of the eyes, was an unmistakable finding.

*Myalgia*, referred to the low back area, was an often-repeated complaint.

In contrast, other common symptoms such as soreness of the throat, chest pain, anorexia, nausea, and vomiting were notably insignificant.

*Physical Examination.* The findings on physical examination of the chest, including inspection, palpation, percussion, and auscultation, were strikingly negative. Very rarely were minor scattered rhonchi, occasional wheezes, and less frequent discrete rales heard. Plethoric facies associated with elevated temperatures were found uniformly. Pharyngeal injection, nonspecific in type, and associated with discrete, mobile, slightly tender cervical lymph nodes, was common.

*Laboratory Studies.* Laboratory findings were non-specific and of little diagnostic value. Because of the involvement of many of our laboratory personnel, bacteriologic studies were of necessity minimal. Hematologic observations revealed normal hemoglobin. The white blood cell count generally was found to be between 5,000 and 9,000 per cu. mm. with little in the differential count that varied from normal. A relative lymphocytosis was observed frequently. Urinary abnormalities were infrequent and cleared spontaneously. Roentgenograms of the chest were taken on all patients. In uncomplicated cases of influenza the chest films were uniformly normal.

Shortly after the onset of the epidemic, blood specimens were drawn from 16 patients, in order to determine the nature of the afflicting virus. Subsequently, only one patient from each 100 was studied serologically. A four-fold or greater increase in antibody titer in the convalescent specimen as compared to the acute stage specimen was considered positive evidence of infection. The results of these studies indicated that the offending agent was the Asian influenza virus, A/Japan/305/57.

*Effect of Vaccination.* Vaccination of local military personnel was begun as soon as the polyvalent vaccine with Asian strain included became available for wide-scale use in the area. Personnel were immunized on one occasion by intradermal injection of 0.1ml. in each arm. Of the 682 patients with influenza in this series, 376 (55 per cent) had not been immunized, 201 (30 per cent) had been immunized one week before they became ill, and 105 (15 per cent) had been immunized two weeks prior to the onset of illness. There was no discernible difference in clinical picture, complications, or course of the disease between the immunized and nonimmunized groups.

*Temperature Curve.* Among the uncomplicated cases 91 per cent had a temperature curve characterized by a progressive downward trend, reaching normal levels in 48 to 72 hours without salicylate therapy. In 9 per cent of the cases, there was a persistent febrile response which reached normal only after five to seven days of hospitalization.

*Nature and Frequency of Complications.* As is well recognized, the principal dangers



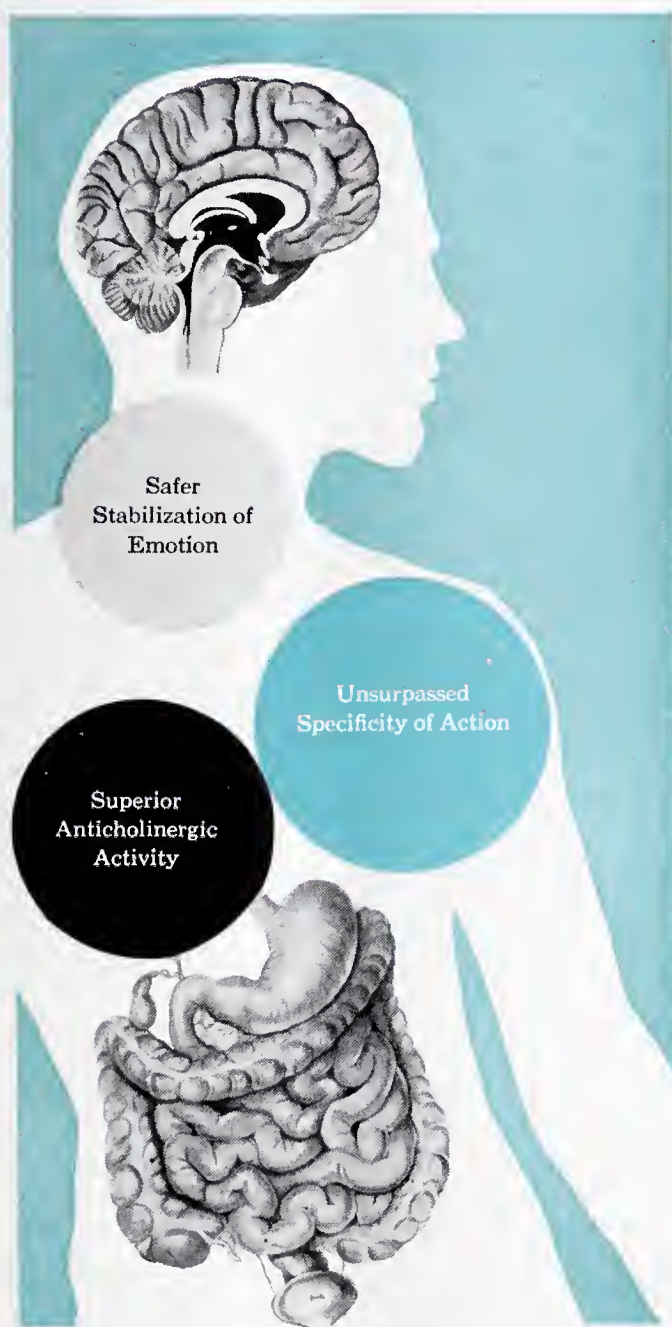
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in an influenza epidemic lie in the complicating illnesses. The most important clinical aid in detecting a developing complication was the characteristic temperature response if continuous salicylate therapy was not employed. Every one of the 31 patients in our series who developed a complicating illness failed to become afebrile in 72 hours. Their temperature curves became normal only after six to seven days.

Although this type of response was exactly like that found in 9 per cent of the uncomplicated cases in this series, it provides an urgent clinical warning to the practicing physician. When such a febrile response is encountered, careful re-evaluation of the case with appropriate diagnostic procedures, including the necessary radiologic technics, is in order, to rule out the presence of a complicating infection.

*Therapy and Length of Hospitalization.* The principal treatment of uncomplicated cases in this series was bed rest, supported by fluids, administered by mouth in large quantities. Simple expectorants were used, and where indicated, mild analgesics and nasal decongestants were used. With this simple but effective regimen, the average hospital stay was six days. Hospitalization was necessary only as an epidemiologic control measure.

We used only symptomatic therapy in all cases of this series, with the exception of appropriate chemotherapy when a distinct complication attributed to secondary infection occurred.

This clinical study provided convincing evidence that complications arising from influenza are easily and accurately recognized by clinical means. Provided sustained

antipyretic therapy in the form of salicylates is not employed, a characteristic febrile response provides a reliable clue to the presence of a complication. When such a febrile reaction is observed, the physician must carefully reappraise the situation and search for the locus of a secondary infection. Once discovered, the complication can be effectively treated. Inexpensive, readily-available medications are adequate for successful therapy of influenza.

*SUMMARY.* A clinical study was made of 682 cases of influenza seen in a sudden epidemic in a military population and serologically confirmed as caused by the Asian influenza virus. It was found that the disease presented a distinct symptom complex which made possible accurate diagnosis on a clinical basis. Physical and laboratory findings tended to be insignificant in uncomplicated cases. In 91 per cent, the temperature decreased steadily to reach normal in 40 to 72 hours, but in 9 per cent it fluctuated between 101° and 102° F for several days. Immunization either one or two weeks prior to onset of the illness had no discernible effect on the clinical picture or course of the disease.

Symptomatic treatment without use of antibiotics resulted in rapid recovery with no fatalities. Complications in 4.6 per cent of the cases were successfully treated with antimicrobial agents. Provided sustained salicylate therapy is not used, every case in which a complicating bacterial illness occurred was heralded by a characteristic elevated temperature for more than 72 hours providing a clear warning that search for such a possible complication should be undertaken.



# The JOURNAL OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

OCTOBER, 1958

Number 5

## The Diagnosis and Treatment of Non-Penetrating Wounds of the Abdomen

WILLIAM REQUARTH, M.D.\*

The marked increase in non-penetrating wounds of the abdomen in recent years can be attributed in part to the rise in violence of automobile accidents. That the problem is serious is indicated by Estes<sup>1</sup> who reported 67 patients with this type injury with a 19.4% mortality. In this group there were 9 patients with ruptured spleens, 5 of whom expired. The sudden sharp blows associated with steering wheel and dashboard injuries do not allow abdominal viscera to slide aside and therefore rupture is frequent. Structures such as the duodenum, ascending colon and bladder, which are relatively fixed and can not escape the line of application of force, are especially affected. The application of devices such as safety belts may be effective in reducing the incidence of these injuries but at present blunt wounds present a diagnostic challenge equal to any in medicine. Early diagnosis is mandatory for successful treatment. The presence of associated injuries which divert the attention of the examiner plus the absence of external injury to the abdomen both act to delay operation.

### SHOCK

One of the chief difficulties in diagnosis is the fact that some degree of shock is present after most abdominal injuries. About 70% of these manifest only a shock-like state as a result of a blow on the celiac axis, there is no visceral injury and recovery is prompt without operation.<sup>2</sup> To select from this group those with actual injuries, requires maximum attendance by

the surgeon and repeated examinations at two to three hour intervals. Temporary recovery is possible even with severe injury but unmistakable signs soon appear which indicate the seriousness of the wound.

Immediately after admission gastric suction is started and an indwelling catheter inserted. If possible, upright X-rays of the chest and abdomen and lateral decubitus films of the abdomen should be made. In addition to a hematocrit and complete blood count, a serum amylase and serum bilirubin are taken if injury to the pancreas or biliary tract is suspected.

During the first hours after admission an effort is made to determine if the dominant symptoms are due to hemorrhage or peritonitis. Few signs may be present, consequently frequent examinations are mandatory. The presence of associated injuries such as fractured ribs or damage to the abdominal musculature obscure the diagnosis. In addition, reflex adynamic ileus occurs in about 60 per cent of cases where there is no serious abdominal injury. Adynamic ileus following severe trauma differs from that associated with peritonitis by its quick response to supportive treatment and normal pulse rate.

About two thirds of patients with blunt abdominal wounds will suffer either massive or gradual blood loss. In the presence of bleeding an effort is made to determine the amount and rate of loss. Blood volume studies with a radioactive isotope are accurate but seldom practical in most hospitals. Serial hemoglobin and hematocrit

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\*Decatur, Illinois.

readings when combined with the clinical picture are usually adequate guides to blood loss provided the patient is well hydrated.

The presence of tenderness, rebound tenderness, muscle spasm and absent bowel sounds indicate peritoneal irritation. The onset may be sudden such as after spillage of colon or stomach contents or bile; it may be slow in onset as after rupture of the duodenum or small bowel. As previously noted, the ileus which accompanies peritonitis is differentiated from that associated with skeletal injury chiefly by the rapid pulse and clinical findings of abdominal tenderness and muscle spasm.

#### INDICATIONS FOR LAPAROTOMY

Needless to say, here as in other cases with acute abdominal pain, the need for laparotomy is a much more important question than diagnosis of the specific injury. Absolute indications for laparotomy are:

1. Pneumo-peritoneum.
2. Abdominal paracentesis yields blood (if associated with signs of active bleeding).
3. Recovery from shock following which the pulse rate slowly increases, blood pressure is lower than normal and there is clinical evidence of hemorrhage. The clinical picture of progressive collapse after initial recovery is significant since it can not be ascribed to shock of injury.

Relative indications for laparotomy are:

1. Persistent and unexplained abdominal pain and tenderness,
2. Gradually increasing distention, loss of bowel sounds and rising pulse,
3. Persistent and unexplained anemia following an abdominal injury.

The time for operation depends on the shock status, those who respond well and stay stabilized being the best candidates if the indications are present. Where the response is poor, the situation is desperate and frequently hopeless. In some instances with the support of much blood, operation may be done in the presence of unrelenting shock with an occasional good result. Although the need for laparotomy is the most important decision to be made, the diagnosis of specific injuries is also important when possible. This is especially true in the case of rupture of the spleen since it direct-

ly affects the placing of the abdominal incision.

#### RUPTURE OF THE SPLEEN

Rupture of the spleen is by far the most common major injury caused by non-penetrating violence. Injury to the liver is about equally as common but here the bleeding may stop whereas even small tears of the spleen continue to bleed. Damage to the spleen is frequently overlooked since trifling accidents can rupture this organ. Fractured ribs may divert the attention of the examiner whereas actually their presence should alert him to the possibility of rupture of the spleen. A more important cause of delays and errors in diagnosis is the failure to realize that there are variations in splenic rupture which produce marked variations in clinical signs. There are actually three types of splenic rupture each of which produces a different clinical picture.

The common classic rupture of the spleen with gross free bleeding in the peritoneal cavity produces the typical picture of abdominal pain, tenderness and evidence of internal hemorrhage. The escaping blood causes peritoneal irritation which at first is confined to the left upper quadrant but later becomes diffuse. At first bowel sounds are normal and abdominal tenderness is localized to the left upper quadrant but as bleeding progresses tenderness becomes diffuse with rebound, absent bowel sounds, a rapid pulse and adynamic ileus, all due to the irritating action of blood. Left shoulder pain is common. There is evidence of marked blood loss with pallor and a falling hematocrit reading.

A different clinical picture is produced by rupture of the parenchyma with subcapsular or retroperitoneal bleeding in which no blood escapes into the free peritoneal cavity. In such cases pain and tenderness, if present, are moderate and localized to the left upper quadrant. A persistent unexplained anemia may be the most prominent symptom.

Delayed rupture of the spleen may follow days or weeks after injury. During this time there may be trifling leakage into the peritoneal cavity until suddenly the capsule tears and massive hemorrhage occurs. The final clinical picture is the same as classic rupture of the spleen.



Characteristic X-ray findings in rupture of the spleen are: (1) an opacity in the left upper quadrant of a plain film of the abdomen, (2) elevation of the left diaphragm and (3) displacement of the gastric air bubble to the right with the patient in an upright position.

The treatment of ruptured spleen is splenectomy. It is important that when splenic damage is suspected, the incision be on the left side of the abdomen and if exposure is inadequate one should not hesitate to add a lateral transverse extension to the incision.

#### RUPTURE OF THE LIVER

The force required to rupture the liver is usually greater than that in rupture of the spleen, consequently associated injuries are common and may obscure the diagnosis. The majority also involve the right kidney with or without fracture of the right ribs. Severe hemorrhage is the chief complication and soon produces peritoneal and diaphragmatic irritation. Right shoulder pain may be present plus an elevated motionless diaphragm. If sufficient bile has escaped slight jaundice is possible. Needle aspiration of blood from the abdomen establishes the diagnosis.

At laparotomy, hemorrhage is controlled either by ligating the vessels individually or by mattress sutures and a Gelfoam pack. The wound should be drained.

#### RUPTURE OF THE DUODENUM

Rupture of the duodenum is a very lethal, deceptive injury. Clinical manifestations are minimal. The rupture is usually retroperitoneal and no contents reach the peritoneal cavity early to produce prominent signs. There is frequently a period of brief shock followed by recovery and later by the gradual onset of peritonitis over a period of several days. Bowel sounds are normal or only slightly decreased and the patient is frequently ambulatory. The most consistent early finding in my experience has been persistent deep tenderness. The X-ray is usually not helpful. Occasionally escaping air will outline the kidneys or there will be obliteration of the right psoas shadow. Injuries to the pancreas are frequently associated.

Laparotomy is indicated in a patient with a history of abdominal injury, persist-

ent deep tenderness, low grade fever and increasing pulse rate. The operative findings are deceptive and thorough exploration of the abdomen may reveal no lesion. Examination of the base of the mesocolon, however, will usually reveal a collection of retroperitoneal fluid or blood. All hematomas in the region of the pancreas or duodenum should be thoroughly explored. Exploration of this region can be accomplished only by mobilizing the entire ascending colon and turning it medially to expose the descending and transverse portions of the duodenum. The site of rupture may be its most inaccessible portion, the fourth part of the duodenum where it crosses the vertebral column. After the tear has been repaired a sump drain or Chaffin tube should be put in place.

#### RUPTURE OF THE INTESTINE

Rupture of the intestine occurs more often as the result of a sharp thrust such as a kick by an animal or following a run-over accident in children. Clinical manifestations may be delayed because the opening is small, may be plugged by mucosa or spillage kept localized by the normal walling off process of the body. If the perforation is large or if the colon is perforated the onset of peritonitis is not delayed and symptoms appear early. The usual findings are persistent abdominal pain and tenderness with gradual development of peritonitis. Pneumoperitoneum is present in about 50% of patients and is more apt to occur after perforation of the upper small bowel than the lower.

During exploration one is most likely to find the perforation at its fixed portion either near the ligament of Treitz or at the ileocecal region. Perforations of the colon should be treated by exteriorization unless the hole is quite small and practically no leakage has occurred prior to surgery. Even then, some risk is associated with primary closure of a colon perforation.

#### KIDNEY

Damage to the kidney is the commonest visceral injury and the great majority will recover without operation. In a small number of cases, severe damage will require nephrectomy. The appearance of blood in the urine in any amount combined with the history of injury is usually sufficient to make the diagnosis. Pain and

muscle spasm in the flank may be present along with fracture of one or more of the lower ribs. More difficult is the appraisal of the severity of the injury to the kidney. Excretory urograms are unreliable in the first twenty-four hours since they normally show non-function even without damage. Retrograde pyelography, when possible, will show the extent of rupture and destruction of the pelvis.

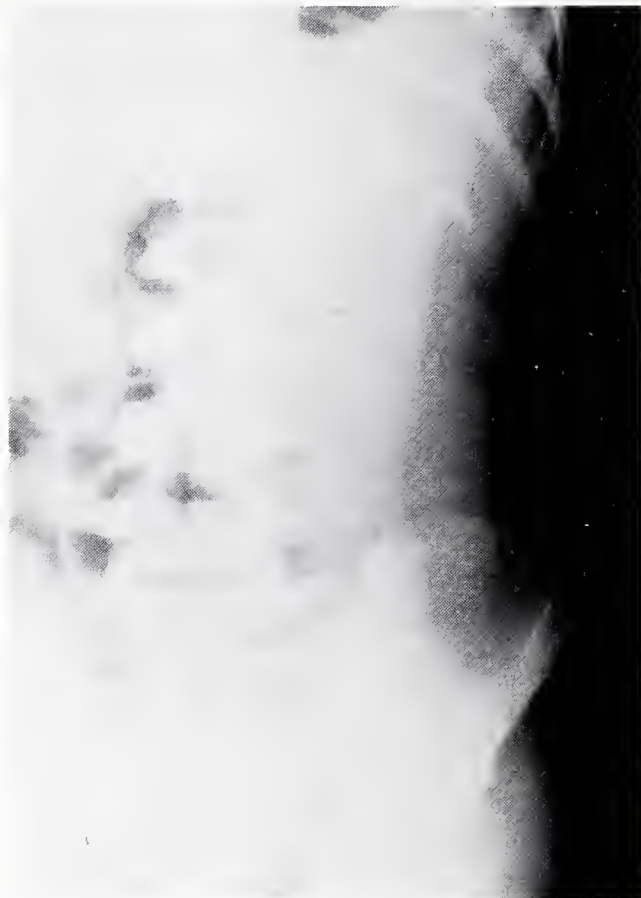
If the condition of the patient at first is good but later deteriorates with falling pressure, transfusions should be given and the degree of injury determined by pyelography. If this is normal it is still best to delay operation and continue transfusions and observation since most will recover. When the pyelogram reveals severe damage with signs of progressive blood loss nephrectomy is indicated. Removal of the

kidney in the presence of shock is extremely hazardous and often fatal and should not be attempted.

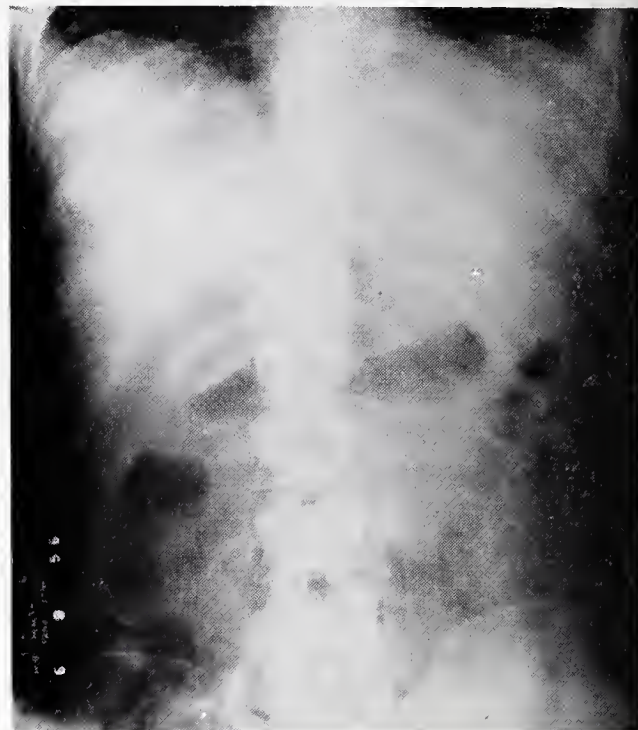
#### INJURIES OF THE BLADDER

Rupture of the urinary bladder almost always occurs as a complication of fracture of the bony pelvis. The bladder should be emptied by catheter in every case of pelvic fracture involving the bones of the pubic region. If nothing is obtained but a little watery or clotting blood, bladder rupture is almost a certainty. If a sizeable quantity of urine is obtained, even though it is bloody, there is some chance that the bladder has only been contused and an indwelling catheter may be all that is necessary.

Only about 15% bladder ruptures are intra-peritoneal and surprisingly enough this is much better tolerated than extravasation of urine in the loose areolar tissue about the bladder. Symptoms are often obscure until such time as extensive extravasation has occurred with marked

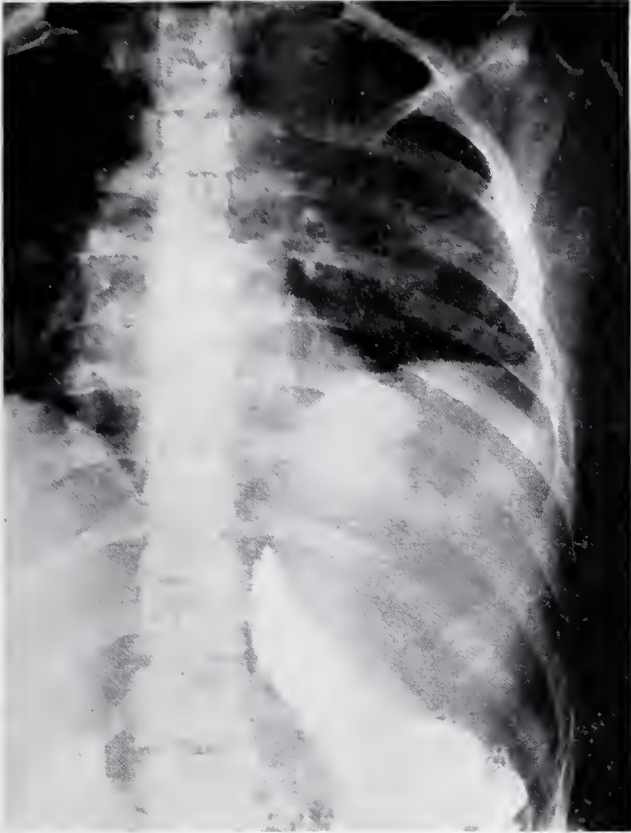


1. Nine year old child fell from a horse, struck left upper quadrant of abdomen. Clinical manifestations were left abdominal pain, pain in the right shoulder and muscle spasm in the left upper quadrant. Erythrocyte count 4,100,000. Hematocrit 40 cc. Fluoroscopy showed limitation of motion of left diaphragm and plain film opacity in the left upper quadrant of the abdomen.



- 2A. Thirty-one year old male in automobile accident. Severe left upper quadrant pain attributed to fractured ribs. Diffuse abdominal tenderness, slight muscle spasm left upper quadrant. Erythrocyte count 4,200,000. Hematocrit 39 cc. Plain film of abdomen shows opacity of left upper quadrant with displacement of gastric air bubble downward. Laparotomy: classic rupture of spleen with huge hematoma.





2B. Displacement of stomach by splenic hematoma. Laparotomy: rupture of spleen.

lower abdominal pain, tenderness and board-like rigidity. The injection of sterile water into the bladder followed by an attempt to recover a measured amount is unreliable as a diagnostic measure. A cystogram after the injection of 5% sodium iodide shows diffusion of the dye into the extravascular tissues and makes the diagnosis.

Treatment is directed towards first stopping further extravasation by emergency cystostomy. Secondly, all tissue involved by extravasation should be opened widely and drained by multiple Penrose drains. Finally, and probably least important is closure of the bladder injury which may be only a 1 or 2 cm. rent.

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# Histoplasmosis in Arkansas

JOHN T. HERRON, M.D.\*

MICHAEL L. FURCOLOW, M.D.\*\*

It appears worthwhile to call the attention of the physicians in Arkansas to the incidence of this fungus infection in the state. This appears timely because of the occurrence of an epidemic recently in a school in Baxter County in which more than 150 children were infected and because cases have been found in the State Tuberculosis Sanatoria. In addition the disease is now reportable in Arkansas and it appears desirable that physicians be more aware of this interesting and important disease.

The epidemic in Mountain Home, Baxter County, commenced early in February and the peak appeared to be about the middle of the month. Thirty-six cases were ill enough to be reported as cases, and investigation of the local area re-

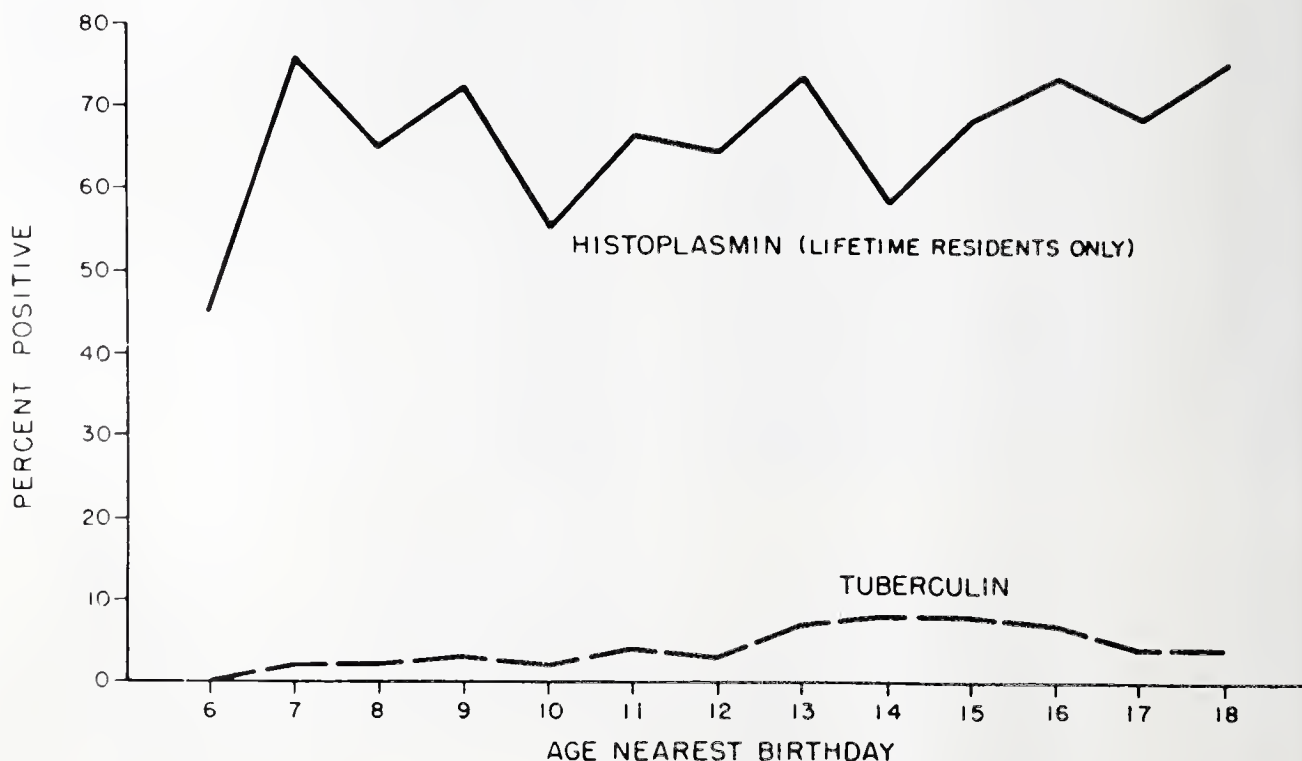
vealed that approximately 150 children of the 386 in the school either had positive serology, positive chest X-ray findings, or both. An investigation of the epidemic indicated that it apparently arose from the dumping of a load of coal in the school yard, from which considerable amounts of dust arose during the period of early February. An account of the outbreak was published in the Southern Medical Journal in August 1956.

Of more general interest to physicians is the fact that a skin testing survey with tuberculin and histoplasmin was performed in Baxter County shortly after the epidemic. Figure I shows the frequency of tuberculin and histoplasmin reactors in that county. This includes the Mountain Home area where the epidemic occurred. It can readily be seen that histoplasmin sensitivity is extremely prevalent in this county; approximately two-

\*State Health Officer, Arkansas State Board of Health, Little Rock, Arkansas.

\*\*United States Public Health Service, Kansas City, Missouri, University of Kansas School of Medicine.

PERCENT OF POSITIVE HISTOPLASMIN AND TUBERCULIN REACTORS  
BY AGE AMONG SCHOOL CHILDREN  
BAXTER COUNTY, ARKANSAS - SPRING, 1955





thirds of the children being positive. This points up the extreme prevalence of this fungus infection in the area of north central Arkansas. As is well known, histoplasmin sensitivity is extremely prevalent in Missouri and tests have indicated that as much as 90 per cent of the adult population in Missouri is positive to the skin test.

A total of 3,461 sera from the State Tuberculosis Sanatorium at Booneville, Arkansas have been examined and 151 or 4.3 per cent were found to be positive by the serological tests, including active disease. 349 sera were obtained from the McRae Sanatorium of which 7 to 2 per cent were positive by the serological tests. Based on tests in other areas it is evident that probably all of these 158 positive serological tests are cases of histoplasmosis. Actually satisfactory sputum tests were not done on many of these cases so that the percentage proved is low. There have been only 15 cases proved by culture, 13 of which were histoplasma and 2 blastomyces. These were from sputum examined from the State Sanatorium at Booneville. No cases have been proved by culture at the McRae Sanatorium. It has been shown in previous tests at the Missouri State Sanatorium that if adequate cultural procedures are followed, almost half of the positive serologies can be proved as cases. The presumption has been that a positive serology represents a case. It is to be remembered that the cases found at the two sanatoria present only the most extreme cases inasmuch as they are usually of a cavitary nature.

It has been amply demonstrated by studies in other areas that most cases of histoplasmosis are of a mild nature and that the cavitary disease represents a relatively small part of the picture. Most early infections are evidenced by no symptoms, or by influenza-like symptoms which in their more severe form resemble atypical pneumonia. The X-ray findings are often compatible with this disease. With more extensive exposure and infection at the point source, the so-called "epidemic" histoplasmosis develops in which the lungs are filled with many nodular lesions which on healing, produce milary calcification of a type which has in

the past been called milary tuberculosis. Reports from the Tuberculosis Division of the State Board of Health indicate that calcification, often of a considerable extent, is seen frequently in X-rays in this state, indicating that histoplasmosis is probably a prevalent condition.

#### REPORTS OF HISTOPLASMOSIS IN ARKANSAS

Reported cases of histoplasmosis in Arkansas began in 1954 when the disease was made reportable. In that year only 5 cases were reported. In 1955, 81 cases; in 1956, 19 cases, and in 1957, 17 were reported and 9 were reported up to May 1, 1958. Also 9 cases of blastomycosis were reported in 1957 in the state. The reporting of 90 cases in 1956 certainly indicates an increasing recognition of the importance of this disease to physicians of Arkansas.

#### DIAGNOSIS

Since the fungus is resistant to antibiotics commonly used, any respiratory condition resistant to common antibiotic therapy should be suspected as of fungus origin. This is particularly true when more than one case occurs in association with some particular point source or point of exposure. Diagnostic procedures employed should be the skin tests, serological tests, and culture of exudates from the body and pathological examination of tissues available. The material for the skin tests can be secured either from the Eli Lilly Company or the Parke Davis Company. The State Health Department provides services for serologic tests and culture of the specimens. In order to secure the serological service it is necessary that 5 ccs of plain unoxalated blood serum be forwarded to the state laboratory. On any case with positive serology, or in which the diagnosis is not clear — or in which tuberculosis cannot be proved, sputum samples should be sent. These can be sent in containers supplied by the State Board of Health, and at least 3 samples should be supplied before a negative report can be considered of value.

#### TREATMENT

Recently an antibiotic has been developed which appears to have suggestive therapeutic potency. While this drug is still in the experimental stage, it has been

used at the University of Arkansas School of Medicine, at Booneville, and by the United States Public Health Service in widespread studies with very good results. It is interesting to note that this antibiotic is also effective against cryptococcosis or torulosis, particularly the meningitic phase. Information regarding this antibiotic can be secured by contacting the State Board of Health.

In addition to serologic and culture tests for histoplasmosis the State Board

of Health will secure for loan an educational film called, "Histoplasmosis — the Mississippi Valley Disease." This 30 minute film helps present the problem of histoplasmosis as it now exists.

In summary, the fungus disease, histoplasmosis, is prevalent in Arkansas. It appears desirable that all practicing physicians be familiar with its manifestations and with the diagnostic services available to them through the State Board of Health.

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## Levator Muscle Surgery

HAROLD BEASLEY, M.D.\*

In order to be prepared to do any levator surgery, one must be thoroughly familiar with the anatomy of the lid and other ocular structures. Most surgery in this area, is designed for ptosis, either congenital or acquired, but occasionally traumatic cases require some special knowledge of the structure.

Although a discussion of anatomy seems quite basic, this presentation would be incomplete without it. Berke has contributed greatly to our knowledge of the surgical anatomy of the lid and orbit. He divides the lower part of the upper lid into four surgical layers; (1) skin; (2) orbicularis; (3) pre-tarsal tissues; (4) tarsus. The upper part is made up of seven layers: (1) skin; (2) orbicularis muscle; (3) septum orbitale; (4) orbital fat; (5) levator aponeurosis; (6) Muller's muscle; (7) conjunctiva. It is well to remember that the septum orbitale fuses with the levator aponeurosis just above the tarsal plate. These structures then extend downward to insert into the anterior surface of the tarsal plate and some of the aponeurosis fibers insert into the skin to form the lid fold. In order to free the levator, the dissection must be

in a plane between the aponeurosis and the septum and if these structures are picked up together, the dissection may extend anterior to the septum rather than posterior to it. The lower plane of dissection should be between Muller's muscle and the conjunctiva. Whitnall's check ligament, extending from the pulley of the superior oblique across the upper surface of the levator to the lacrimal gland, serves as a landmark after the orbital septum is reflected upward. The medial horn of the levator is attached to the internal canthal ligament and the posterior lacrimal crest. The lateral horn is inserted into the external canthal ligament and the lateral orbital tubercle. Both of these horns must be cut in order to free up the central portion of the tendon.

Many operations have been devised for congenital and acquired ptosis. The indication for any one of the procedures has been determined by whether or not levator action is present. We have all heard many times that a levator shortening procedure will not work unless some levator action is present. It was Blaskovic's contention that his operation gave complete satisfaction even when the levator muscle was absent. It is true that the operation is more successful if some action is present, but the fact that no action can be

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§Presented at the EENT Section Meeting, May 6, 1958, during the annual session of the Arkansas Medical Society.



demonstrated does not doom the procedure to failure. I cannot share Blaskovic's enthusiasm, even in the absence of the muscle, but I have not encountered a case of this kind. There are twenty-six surgical procedures designed to shorten the levator muscle but most of these are variations of the Blaskovic or the de Laperonne operations, indicating either an approach to the levator through the skin surface or conjunctival surface of the lid. These procedures have been modified and refined by several surgeons, and the simplest and most effective ones are Berke's modification of the Blaskovic's procedure and the external approach as advocated by Leahy and Johnson. Either of these operations is effective if done properly and with the correct indications. Generally, more correction can be obtained with the external approach and works better for congenital cases whereas the conjunctival approach gives better results in the acquired ptosis.

I believe a levator shortening procedure is indicated in any congenital or acquired ptosis without involvement of the extraocular muscles and in the absence of corneal anesthesia. Certainly, it is more physiological in its approach to the problem. The advantages of the procedure are (1) a normal lid fold is usually restored; (2) postoperative reaction is negligible; (3) the lid margin retains its normal curve; (4) lagophthalmos and corneal damage are rare; (5) the extraocular muscles are not disturbed and there is no danger of postoperative diplopia or binocular defect; (6) the winking reflex is not disturbed.

Preoperative studies should rule out associated anomalies such as paresis of the extraocular muscles, blepharophimosis, epicanthus and the Marcus Gunn phenomenon. The patient should be studied in the morning and afternoon on two or three occasions. The amount of ptosis is determined by the amount the lid overlaps the cornea in the three positions, (a) eyes up; (b) primary position; (c) eyes down, assuming that the vertical diameter of the cornea is 11 mm. The presence or absence of levator action is judged by holding the brow in order that the lid may not be elevated by the frontalis. If a lid fold is present, it must be assumed that

some levator action is present, even though it is not demonstrated. The amount of ptosis should also be observed with eyes right and eyes left, because frequently it may be necessary to shorten the medial horn more than the lateral horn or vice versa. The presence or absence of Bell's phenomenon should be determined. The position of the upper lid fold is another important consideration in the preoperative studies. If the ptosis is unilateral, the fold in the sound lid should be measured as it extends above the lid margin. This is usually 5 to 6 mm. The visual acuity must be determined and the presence of fusion, diplopia or amblyopia ascertained. The cornea must be examined carefully for the presence of anesthesia. Exposure keratitis is almost sure to develop if an anesthetic cornea is uncovered. Pictures are taken preoperatively with the patient looking up, in the primary position and looking down.

Congenital ptosis should be corrected between the years of three and six when it is necessary only for cosmetic reasons. If the ptosis interferes with vision it should be done as early as possible. Surgery for acquired ptosis should be delayed until one is sure that there will be no return of function or that medical treatment will not be effective.

I prefer the external approach to the levator for congenital ptosis, because the exposure is much better and the tendon and muscle can be freed up more easily, allowing for a greater resection. This approach also allows for an advancement of the muscle onto the top of the tarsus. In case of an overcorrection, this can be recessed to the top of the tarsus.

The surgical procedure is as follows: A superior rectus suture is inserted and a traction suture used in the upper lid. The initial incision is made the full length of the upper lid 5 to 6 mm above the lash margin. This extends down to the tarsal plate and dissection is done above being careful to stay under the orbital septum, and below, down to the lash margin, exposing the anterior surface of the tarsal plate. A button hole incision is made with scissors through the levator aponeurosis, Muller's muscle and conjunctiva at the inner angle of the skin incision. A



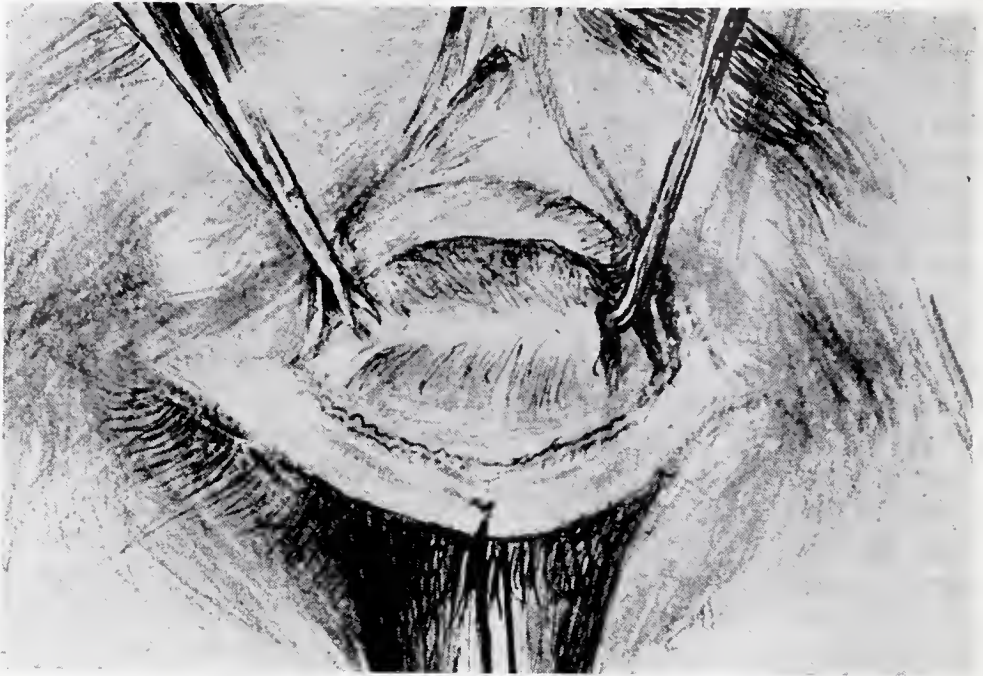


FIGURE 1

muscle hook is introduced under these structures with the toe pointing laterally (Fig. 1) and a second button hole incision is made over the point of the hook. Berke's levator clamp is then introduced and clamped into position just above the top of the tarsal plate. The tarsal plate should not be in the clamp because its resection must be avoided. Any weakening of the structure is likely to cause tenting of the lid margin. The structures in the clamp are then cut from the tarsal plate and the clamp rolled upward. The conjunctiva is then dissected from Muller's muscle back to the upper fornix (Fig. 2)

after which it is sutured to the upper tarsal margin with 5-0 plain gut. The central two-thirds of the muscle is freed by cutting the tendonous lateral and medial horns. This must be complete to get good correction and to avoid restriction of the lid movement in downward gaze. The lid is then placed at the desired position in order that sutures can be placed in the muscle in the correct position. If levator action is absent or questionable, try to place the lid margins about 1 mm above the upper limbus. If there is definite levator action, place the lid margin at the level of the upper limbus. Three 4-0

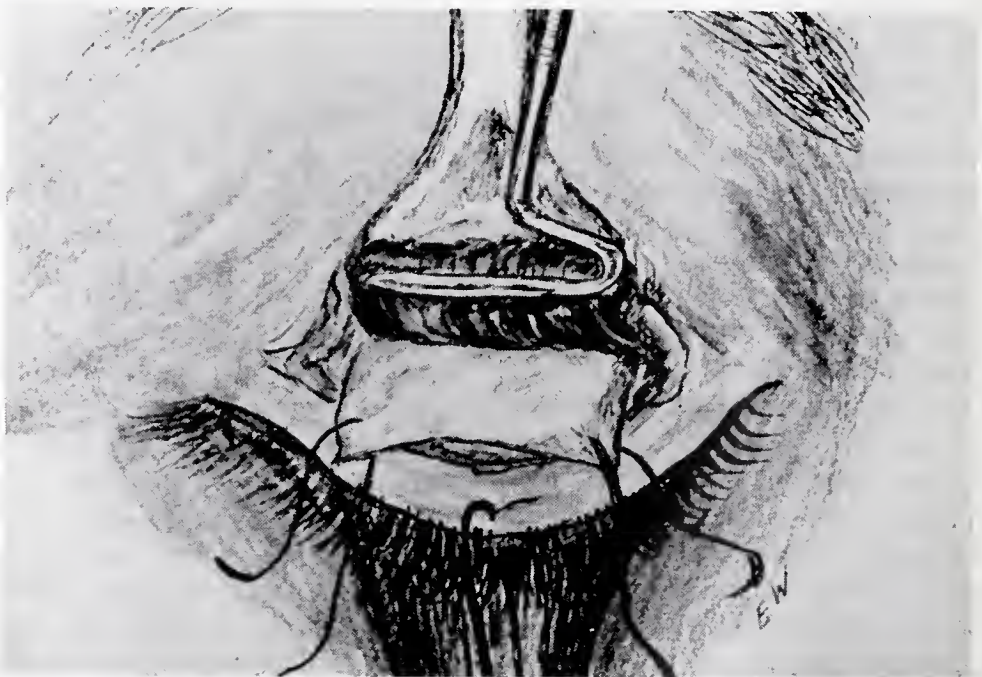


FIGURE 2



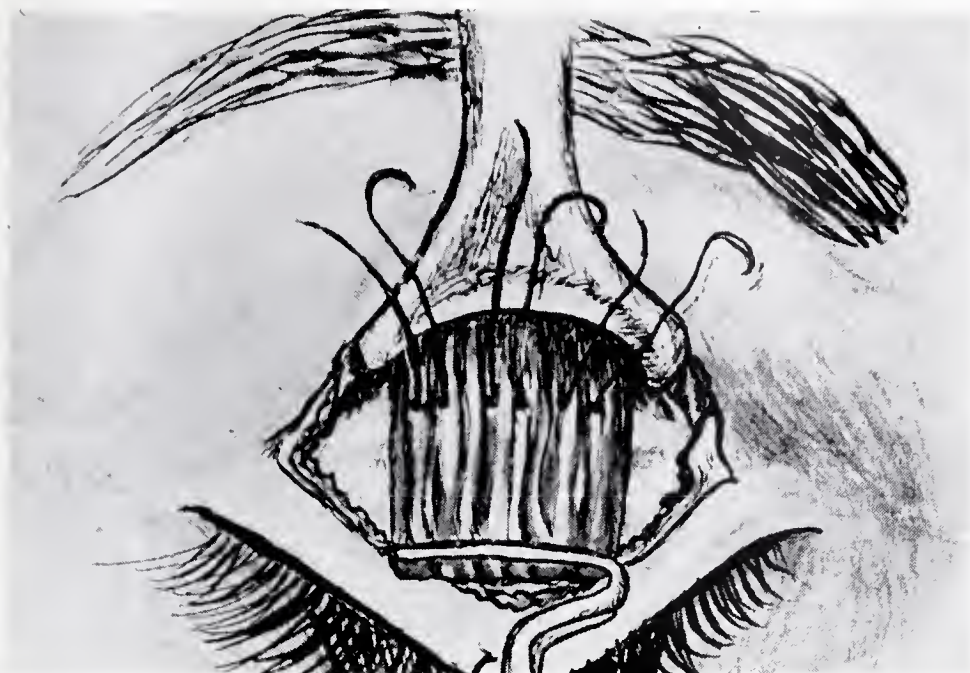


FIGURE 3

chromic gut sutures are inserted in the levator at the desired position (Fig. 3) and the excess muscle and aponeurosis are resected. The needles are then inserted into the anterior surface of the tarsal plate about 3 mm above the lash margin. The bite should be horizontal and if the needle went from right to left in the muscle, it should go from left to right in the tarsus. (Fig. 4) This is a point made by Johnson and is well taken. This procedure tends to roll the end of the muscle over so that conjunctiva is not caught between muscle and tarsus and there is less chance for muscle fibers to slip out of the suture. The sutures can now be tied with

one knot and the lid position observed. If it is not right, the sutures can be slipped out easily and reinserted higher up on the tarsus or more muscle may be resected. When these sutures are tied, the skin is closed with 4-0 silk in adults and with 4-0 chromic and 5-0 plain in children. It is necessary to take three deep bites to re-establish (Fig. 5) the lid fold and pull the lash margin upward. This is done by passing the suture through the lower skin flap and putting this flap on stretch, after which the needle is passed deeply into the levator and tarsal plate to emerge through the edge of the upper skin flap. The deep sutures are tied and the skin can be closed

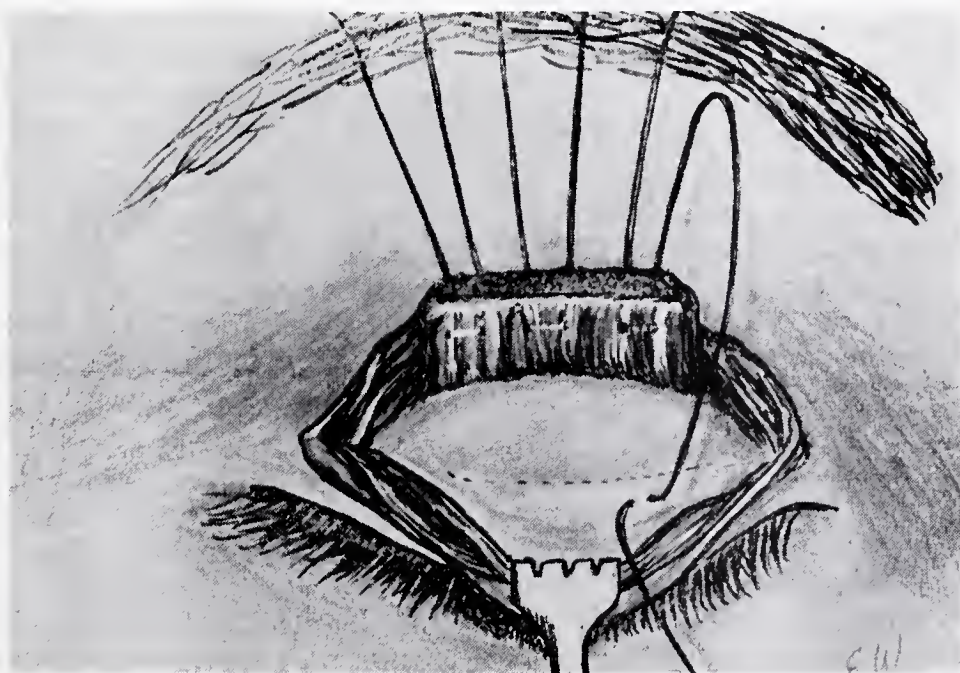


FIGURE 4

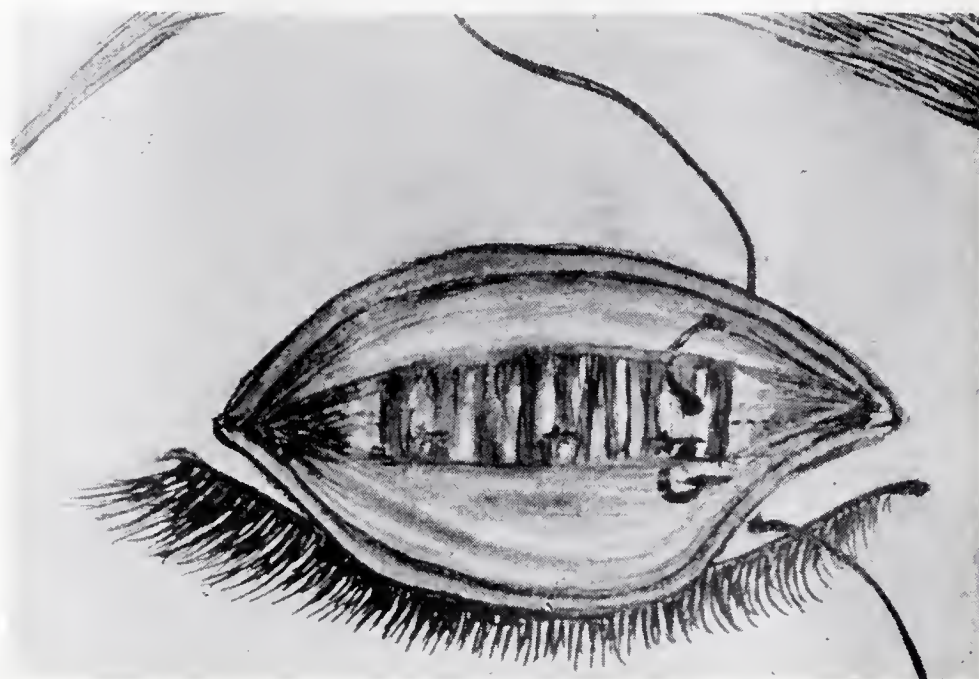


FIGURE 5

further with superficial sutures of 4-0 silk or 5-0 plain. A Frost suture is introduced into the lower lid margin and the lower lid is pulled up over the eye for protection. A pressure bandage is applied and kept in place for three days. At the first dressing, the Frost suture is removed and the eye allowed to be open. Methylcellulose drops are prescribed every two hours and if the eye does not close well in sleep, the lower lid is pulled up with tape at night. The cornea is stained daily until danger of exposure keratitis has passed.

If no levator action was present, it is well to have a slight overcorrection at the first dressing, but if levator action is present, a small undercorrection is desirable. The success or failure of the operation cannot be accurately judged until about two weeks have passed.

Berke's criteria for a good result in ptosis correction are as follows:

1. The curve of the margin of the upper lid should overlap the cornea equally on the two sides.
2. The margin of the lid should be a smooth curve and similar in the two eyes.
3. The superior palpebral crease should correspond on the two sides.
4. The eye should be capable of being widely opened and completely closed.
5. Normal winking should be preserved.

6. The vertical distance between brow and upper lid margin should be the same in both eyes.
7. The upper lid of each eye should move synchronously with the globe in all directions of gaze.
8. Diplopia or disturbing heterotropia should be absent.

I wish to present twelve patients and fourteen levator shortening procedures done in the past two years. These cases were not selected, but represent all the levator shortening procedures I have done in my practice in this period of time. Cases done prior to this time are not presented because satisfactory photographs were not made and the preoperative and postoperative evaluations were not as complete as should be for presentation.

Case No. 1, A. C., a white airman, age 27, had congenital ptosis on the right. There were no other abnormal eye findings. Levator action was fair and a good lid fold was present. A Berke modification of the Blaskovic procedure was done and 22 mm of levator were resected.

Case No. 2, W. C., a colored airman, age 24, with congenital ptosis on the left. There was no levator action but he had good frontalis control. There was no lid fold and the eyes were otherwise normal. A Berke modification of the Blaskovic operation was done and 24 mm of levator tendon were resected.



Case No. 3, S. E., a white five year old child with bilateral congenital ptosis with no levator action and no lid folds. It was necessary for this child to carry his chin elevated in order to see. The eyes were otherwise normal. The right levator was shortened 20 mm by the external approach and a 3 mm advancement was done. His left levator was resected 22 mm with a 3 mm advancement. The results were fair and it was necessary to re-operate both lids in order to evert the lashes.

Case No. 4, J. C., a four year old white female child with bilateral congenital ptosis and without other ocular abnormalities. The ptosis was about the same in either eye and although no levator action was present, there was a faint lid fold. An 18 mm resection of each levator was done with a 2 mm advancement by the external approach.

Case No. 5, W. M. Y., a seven year old white female child with congenital ptosis on the right and the eyes were otherwise normal. There was possibly slight levator action and a small fold was barely visible when the child looked upward. The levator was resected 20 mm and advanced 2 mm by the external approach.

Case No. 6, J. M., a four year old white female child with bilateral congenital ptosis, which was more pronounced in the left. The parents did not wish the right eyelid operated and only the left was done. No other ocular abnormality was present. The left levator was resected 17 mm and advanced 2 mm by the external approach.

Case No. 7, D. M., a five year old white female child with congenital ptosis on the right. Some levator action was present and a lid fold was present. The ptosis was more pronounced in the lateral  $\frac{2}{3}$  of the lid. She had a small right hyperopia in the right field of gaze. The right superior rectus appeared to function well, and she had third degree fusion in the primary position. The levator was resected 18 mm with a 2 mm advancement by the external approach.

Case No. 8, J. N., a four year old white male child with congenital ptosis on the right. The eyes were otherwise normal and some levator action was present with

a lid fold. The levator was resected 15 mm and advanced 2 mm by the external approach. The child appeared greatly undercorrected for one month after which his lid came up to the normal position.

Case No. 9, O. C., a  $3\frac{1}{2}$  year old white male with congenital ptosis left. There was a faint lid fold and no levator action was demonstrated. The eyes were otherwise normal. A 25 mm resection of the levator was done with a 2 mm advancement by the external approach. The upper lid was 1 mm below the limbus at the close of surgery.

Case No. 10, J. T., a four year old white male with right congenital ptosis. There was a very faint lid fold and the levator action was questionable. The eyes were otherwise normal. An 18 mm resection of the levator was done with a 2 mm advancement by the external approach. He had slight tenting of the lid but this was not noticed until the postoperative picture was taken and he had good levator control.

Case No. 11, L. G., a 5 year old white male with left congenital ptosis. There was a faint lid fold and some levator action was present. The eyes were otherwise normal. A 22 mm resection of the levator was done with a 2 mm advancement by the external approach. There was about 1 mm undercorrection in the primary position in spite of there being some levator action and the rather large resection.

Case No. 12, Mrs. H. F., a 44 year old white female with acquired left ptosis of seven year's duration. This had become progressively worse and complete medical studies, including tests for myasthenia, were negative. The levator action was good but the lid consistently passed over her mid-pupillary area and interfered with her vision. The eyes were otherwise normal except for a small refractive error and presbyopia. An 18 mm resection of the levator was done with the Berke modification of the Blaskovic procedure. Her lid is now in good position but it will be necessary to resect some excess skin in the outer portion of the upper lid.

Injuries to the levator are not uncommon. They are usually associated with

lacerations and avulsions. The more severe ones are caused by hook injuries in which the lid is torn at the margin between the medial canthus and the upper punctum. This usually results in the levator being torn from the tarsus and often further up in the tendon or muscle. Usually the levator tendon is not completely torn with resultant retraction into the orbit, but either the medial or lateral horn remains intact. If the tendon is completely torn, the surgical repair is best done under local anesthesia. This allows the operator to notice movement in the tissues when the patient opens and shuts his eyes and helps to identify the torn end. If either of the horns is intact, it is well to follow these upward to the muscle thence downward to the cut end. The cut surface should be sutured to the top of the tarsal plate and the tissues of the lid repaired in layers. If one is familiar with the lid anatomy and has identified these structures in ptosis surgery, he is much better equipped to repair the injured lid.

I wish to present the following two cases involving trauma to the levator:

Case No. 1, S. M., a 47 year old white male received a tearing injury on the left upper lid caused by a hook on a conveyor. There was also an avulsion on the left lateral rectus. The lid wound extended from the medial canthus, between it and the upper puncta, and the lid was torn laterally to involve the palpebral conjunctiva, the levator tendon, the orbicularis muscle and skin. The laceration extended over the top of the tarsus. The wound was repaired in layers and the levator tendon was identified by finding the lateral portion which was intact and following upward to the torn portion. The lateral rectus could not be found and Tenon's capsule was sutured to the stump of the muscle and the medial rectus was subsequently recessed. The result was excellent except for diplopia when the head was turned to the left.

Case No. 2, D. S., a six year old white male also injured with a hook attached

to a swing. The lid was practically torn away but the globe was not injured. The laceration began between the upper punctum and the canthus and extended across the upper margin of the tarsus tearing all the tissues across to the lateral canthus. The levator tendon was avulsed from the tarsal plate and also avulsed on itself in two places. Repair was done in layers and the child now has good levator action. It will be necessary to create a better lid fold and probably excise the scar tissue in the lid.

In summary, I wish to recommend that every ophthalmologist make himself familiar with the surgical anatomy of the upper lid in order that he may do levator surgery successfully. This is more in the field of ophthalmology than plastic surgery. The external approach for ptosis is a safe and effective procedure provided the operator has a thorough knowledge of the anatomy and physiology involved. It is almost impossible to get an overcorrection with the conjunctival approach and this procedure is often more indicated for acquired ptosis. The skin approach allows for a greater resection and consequently is more effective in congenital ptosis. A levator resection should not be done if corneal anesthesia is present or if there is associated paresis of the elevators of the globe. Trauma in this area is not uncommon and can be dealt with more successfully if the operator has done ptosis surgery.

I am indebted to Mrs. Ellaraye Whitman for the medical illustrations.

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# ◆ What's NEW ◆

## MEDICINE

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Medicine is such a rapidly changing field that "what's new" today may well be "what's obsolete" tomorrow. Many of the disorders formerly considered in the exclusive province of the internist have slid over into some other specialty or sub-specialty—for example, congenital heart disease or valvular heart disease or even coronary artery disease have occupied a great deal of attention of the cardiac surgeon and with considerable enthusiasm and progress. It is safe to say that the basic problems of bacteriology and therapeutics are still proper medical topics however. Accordingly, it is felt timely to review some of the current concepts in the proper use of antibiotics and a few of the more recently introduced drugs.

### ANTIBIOTICS

At the Fourth Annual Symposium on Antibiotics in October, 1957, at Washington, D. C., more than 150 papers were presented. Attention was given primarily to combined antibiotic therapy especially in the problems dealing with resistant infections with staphylococci.

New antibiotics described were:

1. Ristocetin: A bactericidal agent of low toxicity in man, active against gram-positive bacteria and the tubercles organisms.
2. P. A. 132: A compound, active against gram-positive and gram-negative organisms, fungi and protozoa. It is highly toxic and of doubtful value in human diseases.
3. An Oil: Plant isolated, and active against fungi and the tuberculosis organisms.
4. Nucleocidin: Effective against gram-positive and gram-negative

bacteria, possibly against tuberculosis organisms.

5. Alazopeptin: Effective against certain experimental cancers.

The older antibiotics may generally be grouped as follows:

- I. Bactericidal-Penicillin, Streptomycin, Bacitracin and Neomycin. (Mycifradin, Muciguent)
- II. Bacteriostatic — Chlorotetracycline (Auroumycin), Oxytetracycline (Terramycin), Tetracycline (Achromycin, Panmycin, Polycycline, Steclin, Tetraabon, Tetramycin), Chloramphenicol (Chloromycetin), Erythromycin (Erythromycin, Ilo-tycin), and Carbomycin (Magnamycin). Triacetoleandomycin (Cyclamin), Oleandomycin (Matromycin), Novobiocin (Albamycin, Cathomycin Cordeliomycin) and Nystatin (Mycostatin).

*Penicillin.* This drug is generally accepted as the treatment of choice by all authorities in the human infections caused by organisms susceptible to it, in spite of the host of newer compounds which are also effective against these same infections. This is because of its bactericidal property, ease of administration, very low toxicity and low cost. It is estimated that 75 per cent of all commonly encountered infections are caused by organisms which can be best treated by penicillin.

An extensive search for methods of maintaining high serum levels (penicillemia) has resulted in the development of the following preparations, either by delaying absorption or delaying excretion:

Parenteral:

1. Procaine Penicillin, either in oil or

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water (as Crysticillin, Duracillin, Wycillin) giving serum levels 20-24 hours. 300,000 units every 12 hours.

2. Procaine Penicillin in oil and Aluminum monosterate. Serum levels 24 hours.—600,000 units every 24 hours.
3. Benzethaine Penicillin G. (Bicillin, Diamine) 600,000 units to 1,200,000 units with serum levels 12 to 28 days, depending on the dose.
4. Combinations of above with Crystalline Procaine Penicillin G. (Benzyl)

Oral:

1. Phenoxymethyl Penicillin V. (V-Cillin and Pen-Vee-Oral) 400,000 units three times a day.
2. Citrated tablets or coconut oil suspension. 500,000 units three times a day.
3. Potassium-Penicillin V and Hydrobamine Penicillin V (Compocillin V)

It must be remembered that larger amounts do not result in proportionately higher levels in the serum. The exact amounts required to accomplish a given task have been calculated, for whatever it is worth. One investigator estimated that only 17,000 units were required to cure the usual case of gonorrheal urethritis. Obviously, in clinical practice doses greatly in excess of the theoretical amount are usually employed.

Phenoxymethyl Penicillin (V) is relatively insoluble in the acid medium of the stomach, allowing the penicillin to pass into the intestine for absorption without loss as is true of penicillin G. In spite of this there are serious doubts cast on the superiority of penicillin V because of the plasma binding property of penicillin V, which offsets its higher blood levels obtained by the oral route.

Penicillin is of limited value in most gram-negative bacillary infections, but remains the most active agent against properly sensitive gram-positive infections (pneumococci, streptococci, etc.) and is the most effective agent in the treatment of gonorrhea and syphilis, in spite of the myriad of reports that these diseases can be treated by other agents.

Ten new penicillins have now been synthesized. All of them are hoped to be more active than the natural drug and less allergenic. In summary, concerning penicillin, it may be arbitrarily stated that for patients not known to be allergic to it with organisms sensitive to its action, this drug remains the agent of choice as it is potent, bactericidal, the least toxic of all antibiotics and can be administered easily by all routes, orally, locally, intravenously or intramuscularly.

*The Tetracycline* group and Chloramphenicol represent broad spectrum agents. They are effective against many organisms of both gram-positive and gram-negative groups. Their most valued use is in patients allergic to other agents, or when the microorganism is insensitive to other antibiotics or when the causative organism is unknown or awaiting identification. They are generally more toxic than those with a more limited spectrum. They are very useful in mixed infections, rickettsial diseases, brucellosis, lymphogranuloma, venereum, granuloma, inguinale and amebic carriers. Chloramphenicol holds first place in the treatment of typhoid. Oral administration is a distinct advantage. Of these drugs thorough intravenous and intramuscular preparations are available.

*Erythromycin* is a moderately broad spectrum drug and is especially effective in staphylococcus aureus infection, hemolytic streptococci and pneumococci, *Escherichia coli*, proteus and pseudomonas are quite resistant. It is of greatest value in penicillin resistant staphylococcus infections. The incidence of reactions of an allergic nature is low. An interesting feature of this drug is the rapidity with which resistant strains of staphylococci emerge after exposure to it. It should be employed in optimum doses at the beginning of treatment and continued for a short time.

*Carbomycin* resembles erythromycin and is primarily active against gram-positive bacteria and the enterococcal group. Neisseria are sensitive but not other gram-negative bacteria. Resistance is developed slowly. No cross resistance to other antibiotics is encountered.



Its chief use is in gram-positive bacterial infections resistant to other drugs.

*Oleandomycin* (Matromycin, Signemycin) and Triacetoleandomycin (Cyclamin) are valuable new bacteriostatic agents whose spectrum parallels those of erythromycin and penicillin but goes beyond those spectra by including naturally resistant strains of staphylococci and variants that have emerged by the continuing use of other antibiotics (as gonococci and *H. influenzae*). This includes rickettsiae, large viruses, certain protozoa, *B. Anthracis*, *Erysipelothrix*, clostridia and the diphtheria organism, brucella, *H. influenzae* and the meningococci. About 75 per cent of the staphylococci resistant to erythromycin are sensitive to Triacetoleandomycin. They promise to be especially valuable in infections transmitted by hospital personnel which have become resistant to other antibiotics. This problem of resistant organisms which are transmitted in this manner has received a great deal of attention in recent months. Sensitivity reactions of an allergic nature are few and mild and there are few toxic reactions. Oleandomycin is available for intravenous use where oral usage is not desirable. Both drugs are considered very effective for the eradication of the carrier state in amebiasis.

*Novobiocin* (Albamycin, Cathomycin, Cortomycin and Cordellomycin) is a potent narrow spectrum drug, most effective against staphylococci and some strains of *Proteus vulgaris* and *Streptococcus fecalis*. Its greatest use is in patients allergic to penicillin and in penicillin resistant staphylococcal infections and in *Proteus vulgaris* and urinary tract infections. It is primarily bacteriostatic but is bacteriocidal in high concentrations. It is inferior to penicillin in treatment of diseases caused by penicillin-sensitive organisms. Skin rashes are common in dosage of over 0.5 grams daily. Occasionally a yellowish discoloration of the sclera develops which is easily mistaken for jaundice. This fades on discontinuance of the drug. Its use should be restricted to resistant staphylococcal and *Proteus* infections according to some authors.

*Streptomycin* and di-hydrostreptomycin are generally more toxic and bacterial

resistance emerges more quickly. Their chief use is in gram-negative organisms and in the tuberculosis organisms. In tuberculosis they are generally used in combination with PAS and INH. Streptomycin combined with sulfadiazine is the most potent agent against tularemia, *H. influenzae*, Friedlanders bacillus, plague and gram-negative urinary tract infections.

*Bacitracin* is a potent narrow spectrum drug. It is especially valuable in penicillin-resistant staphylococcal infections, particularly in surface wounds, meningitis and endocarditis caused by these organisms. It is useful in anaerobic streptococcal infections and intestinal amebiasis. It is employed extensively in local ointments and nose and throat preparations. Allergic sensitivity is encountered rather often, as is often the case in topically used antibiotics.

*Neomycin* given orally rapidly reduces the growth of gram-negative bacteria in the gastrointestinal tract, consequently is principally used in the bacillary diarrheas. It can be used locally in wounds infected with gram-negative bacilli and in serious *Proteus vulgaris* infections. It is nephrotoxic and ototoxic and consequently is used with caution parenterally.

*Polymyxin B* is similar and especially useful in *Pseudomonas aeruginosa* infections. Like Neomycin it is nephrotoxic and ototoxic but not dangerously so in ordinary dosage. It is available in a Polymyxin B. Bacterin Ointment (Polyporin) for topical use.

*Viomycin* resembles streptomycin in its effect on the causative organisms of tuberculosis. It is generally reserved for patients whose organisms are resistant to other appropriate drugs.

*Cycloserine* is especially active against tuberculosis organisms but its use is generally confined to patients with streptomycin resistant organisms. In high dosage somnolence and convulsive reactions are reported.

*Tyrothricin* was the first antibiotic to be used clinically. It cannot be used systemically because it is histotoxic and causes lysis of the red blood cells. In concentrations of one-half per cent in water or alcohol it is used locally in superficial

infections against a wide variety of surface organisms.

*Nystatin* (Mycostatin) is dramatically effective against monilia. It is usually combined with other antibiotics to reduce the commonly encountered moniliasis developing after the destruction of normal or vaginal or bowel flora by other mycin drugs. It is effective in vulvovaginitis and thrush when used alone either systemically or locally.

*Ristocetin* (Spontin) is the newest antibiotic to be commercially available. It is effective against gram-positive bacteria especially staphylococci, streptococci and pneumococcal infesters. It is used primarily by the intravenous route in isotonic solutions, consequently should be limited to hospital administrations. Since it is new, no bacterial resistance has been encountered so far and according to reports, is difficult to induce. It is reported successful for short-term use in subacute endocarditis, especially where abscesses or vegetation occurs.

*Combined* therapy represents a third era in antibiotic therapy; the two previous ones being that of the narrow spectrum drugs (sulfa and penicillin) and the second being that of the broad spectrum ones. The use of combinations has been viewed by most authorities as a most significant advance. There is considerable divergence of opinion as to how extensively these combined drugs should be used.

Mixtures are used to:

1. Obtain synergistic action,
2. Delay the appearance of resistant strains,
3. Treat seriously ill patients until bacteriological diagnosis can be made,
4. Treat mixed infections.

Numerous studies have been made to determine if combined drugs are truly synergistic and if using pairs of drugs is more effective than using a comparable amount of either drug alone.

Unfortunately, studies so far have produced few data from which the therapeutic actions can be compared with the effectiveness of individual components. Claims for or against combined treatment must be examined critically. Definite in-

dications exist for the use of combinations about which there is agreement; but it is a sound principle of medical management that the use of a single therapeutic agent against a single sensitive infective agent is the practice of choice. Combined Therapy is generally reserved for special cases.

Combinations, it is agreed, should be used in mixed infections due to organisms sensitive to the combined agents. Also, combinations should be used in cases where, as Keefer says, "A pair is more effective than an ace." They should be used where the combined action will delay the emergence of resistant strains, or where the incidence of toxicity or hypersensitivity can be reduced. Combinations that have been proven to have a synergistic effect are:

1. Penicillin and streptomycin in the treatment of non-hemolytic streptococcal endocarditis.
2. Tetracycline and sulfadiazine in brucellosis.
3. Penicillin and streptomycin with a tetracycline or chloromycetin in a severe micrococcal infection.
4. Streptomycin or di-hydrostreptomycin with isoniazid to delay the emergence of resistant strains of the tuberculosis organism in patients under treatment for tuberculosis.
5. Streptomycin and sulfadiazine in *H. influenzae* infections of the respiratory tract or meninges.

In an attempt to broaden the activity of antibiotics against bacteria and particularly resistant organisms, many combinations have been developed such as:

1. Nystatin with tetracycline (Mystecilin) for moniliasis. This is used primarily to reduce monilia overgrowth. Dowling, however, feels that Nystatin should not be used to reduce candida organisms in the stool, because if suppressed, other organisms may predominate. Again these *Candida* strains may become resistant to Nystatin, if the drug is used excessively. It is felt that the use of Nystatin should be restricted to definite therapeutic indications.



It is useful in the diabetic debilitated patients.

2. Penicillin and Novobiocin (Alba-Penicillin) is claimed to exhibit synergism by destroying the resistant organisms.
3. Oleandomycin and tetracycline exhibits synergism both in vivo and vitro, especially in regard to resistant staphylococci.
4. Combinations are particularly applicable in the treatment of tuberculosis. Streptomycin, isoniazid and PAS in combinations of 2 or all 3 drugs are employed. Two new antibiotics, Viomycin and Cycloserine can be added in cases of treatment failures of other combinations. Viomycin is claimed to add to the toxic effect of streptomycin and should be restricted to critical periods, as through surgery. Cycloserine is likewise potentially toxic, producing nervous system symptoms of the convulsive type. Both of these new drugs are used cautiously in combinations with the older drugs.
5. Antibiotics may be used as a temporary cover to treat seriously ill patients while awaiting a precise bacteriologic diagnosis. It is unwise to use them as a substitute or "shotgun" method, but of necessity in infants or the aged they may serve as a stopgap measure until an appropriate sensitivity study is possible. No one questions the fact that a single agent and an appropriate bacteriocidal agent is preferable to a single bacteriostatic agent and an appropriate narrow spectrum antibiotic is more desirable than a less specific broad spectrum drug.
6. A single antibiotic is frequently sufficient for mixed infections of the gastro-intestinal tract or to prepare a patient for surgery. A tetracycline may be best for peritonitis. A broad spectrum tetracycline is usually effective in bronchiectasis. If multiple pathogens are clearly demonstrable in the urinary tract, combined treatment is advisable.

It is doubted by most authorities that there is need for combined therapy except

in specific instances, since the unnecessary use of needless antibiotics may lead to the development of resistant organisms.

Tetracycline V preparations are now available, and their usefulness is increased by the addition of phosphate to produce faster absorption, giving faster and higher blood levels. Included in this group are:

1. Tetracycline - metaphosphate - buffered (Achromycin V-Lederle)
2. Tetracycline - phosphate - buffered (Sumycin-Squibb, Tetrex- Bristol)
3. Oleandomycin - tetracycline-phosphate - buffered (Signemycin V-Pfizer)
4. Tetracycline - phosphate complex-Nystatin (Mysteclin V-Squibb)
5. Tetracycline - phosphate - Nystatin (Comycin-Upjohn)
6. Triacetoleandomycin - phosphate (Cyclamin-Wyeth)
7. Tetracycline - Glucosamine - Potomated (Cosa-Tetracin) Pfizer

The concurrent administration of human gamma globulin and antibiotics has a potent curative effect in some bacterial infections or in recurrent infections where the use of antibiotics has killed the invading organisms before a natural immunity has been acquired by the human host, after which the patient becomes repeatedly re-infected by his own organisms, all of which have not been eradicated.

*Nitrofurantoin* (Furadantin-Eaton) is a new orally effective antibacterial agent which is promptly absorbed and appears in the urine in 30 minutes, about 40 per cent being excreted by the kidneys in 8 hours, making it eminently suitable for urinary tract infections. Toxicity is quite low and side effects are rare. Both gram-positive and gram-negative organisms are sensitive as well as ordinarily refractive species such as aerobacter aerogenes, pseudomonas, aeruginosa and Proteus. It is quite useful in urinary tract infections during pregnancy.

*Orinase*. Since the discovery of Insulin in 1923 it has been the fervent hope of doctors and patients alike that some agent could be eventually developed to free the diabetic from the needle. Consequently in 1955 when J. Fuchs, a German investi-

gator, published results of clinical studies of a sulfoynlurea in diabetic control there began a tremendous resurgence of interest in this disease. Thirteen years earlier A. Loubatieres and M. Janbon had observed that neurological symptoms developed in certain patients receiving a sulfonamide compound; these effects were later attributed to hypoglycemia similar to that observed in insulin reaction. Subsequently three compounds of the sulfonamide group were demonstrated to have blood sugar lowering properties and were investigated experimentally and clinically. One of these, possessing no antibiotic activity incidentally, named tolbutamide (Upjohn) has been studied extensively, and was later marketed as "Orinase" after studies on over three-thousand diabetics.

The significant pharmacological effect of this drug is that of reducing blood sugar in experimental animals and man. The degree and duration is proportional to the dose up to an optimum level beyond which no further effect is observed even in lethal doses. This effect begins in about one hour and the fasting blood sugar returns to the original level in 6 to 12 hours. The response to a 6 gram dose, for example, is no greater than to a 3 gram dose (usually the maximum amount effective in man). In diabetes the response is maximal in about 4 hours and gradually returns to the original level in about 24 hours, but the fall in blood sugar is proportional in diabetes and normal persons, though slower in diabetics.

The key factor in response seems to be the presence of endogenous insulin in the patient; Orinase will work only where insulin in some degree is already being secreted by the cells of the pancreas. As a result, in juvenile diabetes and surgical diabetes, no response is obtained, but in the vast majority of patients, those with onset after the age of 20 at least and the mild, middleage subjects, excellent response is noted. The percentage of responsive patients decreases as one enters the group requiring large doses but is still fair in many such cases. The combined experience of several hundred clinicians on several thousand patients has revealed that the diabetic most likely to respond is the person who has acquired the disease

past the juvenile period (age 20) and who may be controlled by diet and insulin up to 40 units daily and who has been relatively free of complications. Regretably, this is the easiest group to control anyway, so that this drug is a disappointment in the hard-to-manage group who often require the greatest attention and care.

Side effects are comparatively few, being only 2.8 per cent in the original cases studied and limited to urticarial, erythematous or morbilliform eruptions, nausea, occasional vomiting, anorexia or diarrhea. A few reactions similar to the antabuse effect were noted — that of intolerance to alcohol. Hypoglycemic reactions were not considered bothersome, since that was the effect that was being sought.

The precise mode of action of Orinase has not been evaluated. Several interesting theories have been advanced; none proven. One is that it prolongs the effect of pre-existing endogenous insulin by inhibiting an enzyme system which normally destroys or inactivates insulin. It has been shown to increase the insulin response in totally pancreatectomized dogs. Its effect seems to be independent of endocrine glands other than the pancreas. A second explanation, more likely true, is that in some way it stimulates the release of insulin by the Beta cells of the pancreas. Histological evidence as well as studies with labeled glucose points to this indirectly. A third suggestion is that Orinase acts upon the liver by reduction in hepatic glucose output.

Sufficient experience has been accumulated to draw certain conclusions regarding its most satisfactory use in a clinical manner: (indeed it has met the final test of being described in *Time* magazine for lay consumption).

1. Its greatest usefulness is to be found in the mild diabetic who can be controlled on diet and insulin in doses of less than 40 units daily, or in patients partly controlled on diet restrictions alone.
2. It is of doubtful value in juvenile diabetics and certainly disappointing here.



3. It does not eliminate the necessity for accurate dietary control.
4. It may be used to supplement insulin or reduce the dosage in some cases but does not change the time honored principle of diabetic management.
5. It is of no value in acidosis or coma or infection; the usual principles of restoring fluid and electrolyte balance and adequate dosage of insulin must be strictly observed here.
6. Caution must be observed in changing over from insulin to Orinase with a gradually reducing dose of insulin and simultaneous increase in Orinase. Hospitalization is suggested for the changeover period in most cases. Approximately one week should be allowed for changes.
7. Doses above 2 grams daily are to be avoided. The final maintenance dose may be as low as 0.5 gram (1 tablet) or as much as 1.5 gram. Usually optimum results are obtained on 1.0 gram per day in two doses (one tablet 12 hours).

The current opinion of Orinase may be summarized by stating that it is a well tolerated and effective oral agent for lowering blood sugar in selected diabetics (over 50 per cent of all cases) either alone or with insulin and further study of its mode of action promises to bring a dramatic increase in the knowledge of carbohydrate metabolism.

Another significant pharmacological advance of usefulness in daily medical practice is the development of Chlorthiazide (Diuril). This drug acts as a diuretic agent of the same order of potency as the mercurial diuretics and as a secondary effect, effectively lowers blood pressure in the hypersensitive patient. It has no effect on the blood pressure in normotensive subjects. It has been designated as a "saluretic" agent because of the property of increasing the excretion of both sodium and chloride ions in equivalent concentrations. It lacks the toxicity of previous diuretics whether mercurial or sulfanamide. It can be used for starting water excretion and maintaining an edema free state in congestive failure and

appears to be useful also in almost all of the conditions in which edema is a troublesome feature — toxemias of pregnancy, premenstrual tension, hepatic edema.

In hypertension and hypertensive states it can be used alone in mild cases or as a potentiating agent in the more severe cases with rauwolfia, veratrim, hydralazine and ganglionic blocking agents. It is also effective in securing a further reduction of blood pressure in patients who have undergone sympathectomy to control blood pressure.

The mode of action is not fully defined but it probably acts as an inhibitor of carbonic anhydrase activity in the kidney tubules without damaging these structures. It does not seem to be concentrated sufficiently in the red blood cells of the brain tissues to effect carbonic anhydrase activity in these organs. The net result of administration is to promote excretion of sodium and chloride. Potassium ions are also excreted in increased amounts but to a lesser extent. There is a slight decrease in the excretion of ammonia as a compensatory effect.

Refractoriness does not seem to develop even after long periods of use. It is partly eliminated by the kidneys, though its effect lasts for hours. Glomerular filtration rate or renal plasma flow does not seem to be effected. Probenecid decreases the rate at which it is excreted and does not reduce its diuretic effect. A dramatic effect is its ability to counteract the salt retaining effect of all steroids making it most useful in combating the edema induced by steroid therapy. It is extremely low in toxicity and many times the therapeutic dose is required to produce significant symptoms. The only described side effects are nausea, vomiting, or diarrhea and these are relatively few.

In intravenous use the onset of effect is in about 15 minutes and maximum response occurs in 30 minutes, with major response completed in 2 hours. Its total effect by this route seems to be less than orally.

Clinically its greatest usefulness is in congestive heart failure. Where it may be used initially to achieve rapid loss of

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30 mg. . salicylamide 150 mg. . buclizine HCl 15 mg.

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edema and continued as maintenance therapy, even in patients who have become unresponsive to mercurials.

In renal edema associated with nephrosis and nephritis it is equally effective. Severe renal disease is no contraindication. It does not produce a metabolic acidosis as do the other Carbonic anhydrase inhibitors. In severe renal insufficiency it loses effectiveness. In hepatic edema such as that encountered in Lannec's cirrhosis or portal cirrhosis, excellent response has been reported after other measures have failed. Diuril produces no effect on the basic liver disease of course and is only useful here to render the patient free of ascites.

It is most useful in the toxemias of pregnancy both because of the elimination of salt and water as well as because of the blood pressure lowering effect. Many of the signs and symptoms of the toxemia are improved: loss of weight, reduction of blood pressure and disappearance of albuminuria. The same effect is noted in premenstrual tension states, though the basic endocrine disturbance is not altered. In the reduction of obesity where fluid retention is a complicating factor, it is useful in bringing about an initial loss of weight.

The usual adult dosage is 0.5 to 1.0 grams twice a day, altered, of course, to fit the individual problem. In hypertensives the effective dose of previously used agents may often be reduced by one-half.

Because of its potency in producing excretion of electrolytes the patient should be observed carefully lest excessive use should produce dehydration, hypokalemia or alkalosis due to salt excretion with increase in plasma bicarbonate level. It must be remembered that this drug produces a symptomatic therapy and has no effect on the basic underlying disease which produces the edema in the first place, whether cardiac, hepatic or renal. Hypokalemia may be combated by the administration of potassium chloride and the hypochloremic alkalosis by the use of ammonium chloride just as with other diuretics. Dosages of above 2.0 grams daily do not seem to be more effective than 1.0 gms. daily though no toxicity has been

observed in dosages as high as 4.0 gms. daily.

*Often* an older drug developed or explored for some particular property, is found to have a new effect in a different disease which has been previously unsuspected. This is certainly the case of the blood sugar lowering effect of certain sulfonamides, or blood pressure lowering effects of Diuril. Similarly in the past two years surprising new uses have come to light for the following:

*Chloroquin* (Aralen) — Primarily developed as an anti-malarial and anti-parasitic drug, has now been shown to have a markedly beneficial effect in rheumatoid arthritis when used in long term therapy, almost comparable to steroids and safer over a period of months or years. Its action is unexplained. In doses of 0.25 gm. daily a response is noted in about 8 weeks, consisting of reduction of swelling, pain and stiffness which is apparently maintained for long periods of time.

*Butazolidine* — Primarily used as symptomatic therapy in arthritis but has been shown to be quite effective in superficial thrombophlebitis of the recurrent type through an unknown mechanism.

*Chlorpromazine* (Thorazine) — Has been reported by Watson and others to be effective in reducing the nervous symptoms, pain and disability in acute porphyria. In some patients complete remission was achieved and in the majority effective improvement was noted in doses of 25 mg. three times a day. The mechanism again is unknown although there is probably no alterations in the excretion of porphyrins or its precursors in the urine.

*Iproniazid* — This drug, primarily developed and explored as a "psychic energizer" for the relief of depressive states has been found to produce dramatic results in the symptomatic relief of angina pectoris. Dr. Theodore Cesarman, a Mexican cardiologist, noted marked relief from angina in a severely depressed patient to



whom it was given. He repeated its use in 72 patients suffering from angina of coronary artery disease alone without depression and observed that there was a prompt elimination of chest pain as well as increase in capacity for effort. Considering the fact that preliminary reports in the past have been equally enthusiastic regarding depropionex, testosterone, priscoline, long-acting nitrites and a variety of other drugs whose rationale was obscure, this report also must be evaluated over a longer period of time before it can be accepted. The mechanism of action is completely obscure but so far as is known, probably exerts its action through the central nervous system.

*Summary* — The current attitudes in regard to antibiotic therapy are discussed and a compilation is made of the presently available antibiotics and their major indications. The use of Orinase and Diuril are discussed, as well as newer uses of other drugs.

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## Kernicterus, A Preventable Disorder

ALICE BEARD, M.D.\*

Kernicterus is one of the important causes of cerebral palsy, hearing and speech difficulties and mental deficiency. It was first recognized as a serious neurological complication of untreated or partially treated hemolytic disease of the newborn (erythroblastosis fetalis). Pathologically, kernicterus is a yellow staining of the basal nuclei of the brain of jaundiced newborns by indirect bilirubin and is fatal in about 75% of cases. Essentially all surviving infants develop some mental and motor dysfunction.

### ETIOLOGY

In recent years, there has been an increase in numbers of reported cases of kernicterus, possibly because of better recognition of hemolytic disease of the newborn. Probably, some of the increase in prematures is iatrogenic and related to the excessive use of Vitamin K preparations and to the giving of Gantrisin® and sulfadiazine prophylactically. According to presently available knowledge, the following causes of kernicterus may be listed:

- Hemolytic disease of newborn
  - Rh isoimmunization
  - ABO incompatibility
- Sepsis
- Prematurity
- Prematurity and:
  - Excessive use of Vitamin K
  - Prophylactic use of Gantrisin® and sulfadiazine

Jaundice in the first 36 hours of life is usually associated with hemolytic disease of the newborn of either Rh or ABO antigen incompatibility. Early recognition of potential Rh incompatibilities can be made by routinely typing the pregnant woman at her first pre-natal visit (ideally, this should

also be routine for ABO grouping). If she is Rh negative, her antibody titres should be followed during pregnancy. (Typing sera and instructions for testing in office practice can be obtained from Ortho Laboratories.) At delivery, cord blood is taken for Rh and Coombs tests, hemoglobin, and bilirubin levels. If the cord blood Rh and Coombs reactions are positive, bilirubin and hemoglobin determinations will guide the decision about exchange transfusions. If the cord serum bilirubin is 4 mg.% or above or the hemoglobin below 11 grams, immediate exchange transfusion is necessary, as many of these babies will also have cardiac and circulatory failure. Serial bilirubin levels which indicate that the bilirubin in the serum is rising .5 mg.% or more each hour will necessitate an exchange transfusion as well as those in which the bilirubin at 10 hours is 10 mg.% or more. Careful serial checking of bilirubin levels will enable the physician to keep the serum bilirubin level below 18-20 mg.%, the level at which many babies begin showing signs of kernicterus.

Most babies of ABO incompatible pregnancies develop jaundice less rapidly than those with Rh isoimmunization. The mother's blood type is usually "O" and the baby's "A" or "B". There is no definite diagnostic laboratory test in this condition: the Coombs is either negative or weakly positive, spherocytes may be seen on smear. Reticulocytosis of 10% or more would indicate a hemolytic process. "Jaundice" rounds in many nurseries are made several times daily at which times each baby's abdominal skin is stretched to check for yellow cast. Most ABO incompatibilities are diagnosed because the physician was actively checking for jaundice. About 20% of all pregnancies have potential incompatibility of the ABO system, yet of these

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only 5.5% will have any signs of ABO erythroblastosis.

Not all kernicterus can be associated with increased hemolysis. Prematurity, sepsis, excessive Vitamin K administration and possibly some antibiotics are linked in various ways with the production of high bilirubin levels and kernicterus.

Prematurity itself seems to encourage elevated bilirubin levels. It is estimated that the small premature's liver is only about 5% as effective as the adult in conjugating and excreting bilirubin. Indirect bilirubin in the adult is converted in the liver to bilirubin glucuronide by a series of enzymatic reactions. The immature liver does this poorly and indirect bilirubin accumulates in the serum and tissues from normal red cell breakdown. Indirect bilirubin has been shown to interfere with cellular respiratory processes. This is particularly true of the sensitive, immature cells of the central nervous system where impregnation with indirect bilirubin presumably leads to cellular dysfunction. Prematures reach their peak serum bilirubin usually on the 5th or 6th day, making the first signs of kernicterus most apparent from the 4-8th day of life in this group.

One hospital in England found the incidence of kernicterus in prematures had quadrupled during the time that the dosage of Vitamin K given as Synkavite® had been raised to 10 mgm. daily for three days, having previously been given in the dosage of 1-2 mgm. on the day of birth. A doubling of the serum bilirubin over that found in the control prematures (1500 grams) was noted by Meyer when Synkavite® 10 mgm. daily was given for three days. It is unknown whether the effect of Vitamin K is that of increasing hemolysis or is hepatotoxic, interfering with excretion of bilirubin. Moore and Shannon feel that Vitamin K probably increases hemolysis and have described severe hemolysis in rats made deficient in Vitamin E (Tocopherol) which received large doses of Synkavite®. If this is true, the premature infant, who usually has a low serum Vitamin E concentration, may be particularly prone to develop increased hemolysis and kernicterus after large doses of Vitamin K.

Although most series of kernicterus in prematures relate symptoms to serum bili-

rubin levels of 17 mg.% and above, Harris has a group of 9 cases of kernicterus in prematures in whom the serum bilirubin levels were 15 mg.% or less. These patients all received Gantrisin® or sulfadiazine prophylactically. In another group given tetracycline prophylactically, no kernicterus developed despite the finding of higher average serum bilirubin levels in this latter group. Johnson and Day demonstrated considerable enhancement of the toxic effect of injected bilirubin when newborn rats were given Gantrisin® or sulfadiazine. Kernicterus and death occurred at lower bilirubin concentrations in these animals than in those dying of naturally occurring kernicterus, suggesting a possible neurotoxic effect from Gantrisin® and sulfadiazine.

Sepsis of the newborn has long been associated with jaundice, hepatomegaly and liver dysfunction. Boon in Hong Kong has reported on 26 cases of kernicterus proven by autopsy in term infants under 15 days of age in whom the serum bilirubin varied from 23-54 mg.%. Almost all had fever, diarrhea, umbilical infection or other evidence of sepsis. This report emphasizes again the effect of sepsis on the immature liver and indirectly the immature brain stem.

#### SIGNS AND SYMPTOMS

Kernicterus is a condition peculiar to the first two weeks of life as it apparently does not develop after this time and only rarely after the first week of life. Kernicterus appearing in the first two or three days of life is usually related to hemolytic disease of the newborn while that appearing between the 4th and 8th day of life is usually related to prematurity with or without iatrogenic factors. Sepsis is apparently capable of producing kernicterus into the second week of life.

The following signs were found most frequently in a large group of prematures developing kernicterus:

	60 Babies	
	with	60
	Kernicterus	Controls
Jaundice (Extreme)	38	2
Head retraction	38	0
Expressionless face	40	0
Oculogyric crises	40	0

Muscle tone changes	31	0
Hypotonic	19	0
Hypertonic	12	0
Cyanotic attacks	34	12
Anorexia	30 of 46	5 of 38
Vomiting	31	2
Terminal hemorrhage	8	0

In one large series, 73% of the infants with signs of kernicterus died. In those who survived, many mental and motor abnormalities were found. In the group described by Cross who were examined at 6, 12, and 18 months, they found that in the first six months most infants were irritable, did not sleep well or nurse well. Spells of eye rolling and opisthotonus were common. Children examined at a year of age were still hypotonic, many having the oculogyric crises and opisthotonus; they were all delayed in sitting and standing. At eighteen months, the often described chorioathetoid movements began to appear. Chorioathetoid movements are frequently described in kernicterus and often associated with hearing and speech difficulties. Motor and mental development are delayed. Patients with kernicterus, when compared with normal siblings, tend to have a marked lowering in I.Q.

Pathologically, Zuelzer and Mudgett found the most commonly pigmented areas in their cases to be the following, given in order of frequency: cornu ammonis of the hippocampus, the putamen and globus pallidus, the nuclei of the pons and the medulla in the floor of the fourth ventricle and the mesial portion of the thalamus.

#### PREVENTION AND TREATMENT

From already reported data, it would seem wise to give Vitamin K once only in the first days of life in a dosage not to exceed 5 mgm. Vitamin K<sub>1</sub> oxide given intravenously in a dose of 2.5 mgm. will adequately treat hemorrhagic disease of the newborn and is less toxic than Synkavite®. Further study will make clear the need to avoid giving any of the sulfa derivatives to prematures, but sulfadiazine and Gantrisin® should be eliminated for use in prematures at the present time.

Infection in the newborn which is often due to staphylococcus aureus or a coliform organism should be treated vigorously with parenteral Erythromycin and Chloromy-

cetin® while waiting for blood culture reports and sensitivities.

Since bilirubin is linked with the production of kernicterus, one effective way of ridding the body of bilirubin is exchange transfusion. In hemolytic disease, when done early it will remove the cells tagged for early destruction and prevent the accumulation of bilirubin. Frequently, more than one exchange transfusion is needed, for as the serum is cleared of bilirubin that already in the tissues becomes a part of the serum again. Exchange transfusions repeated as often as necessary to keep the serum bilirubin below 18-20 mg.% have been a very effective means of preventing kernicterus in hemolytic disease of the newborn and is being recommended by many to help the premature eliminate the bilirubin it is not able to excrete through the liver.

Steroids have been recommended for their antibody controlling effect in mild hemolytic disease or as an adjunct to exchange transfusion, but no well-controlled series is available. If steroids are used, bilirubin levels must be followed carefully so that exchange transfusion might be instituted or repeated when necessary.

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# What Is Your Diagnosis?



FOR ANSWER SEE PAGE 228

# Arkansas Public Health at a Glance

## HEARING TESTING PROGRAM IN ARKANSAS SCHOOLS

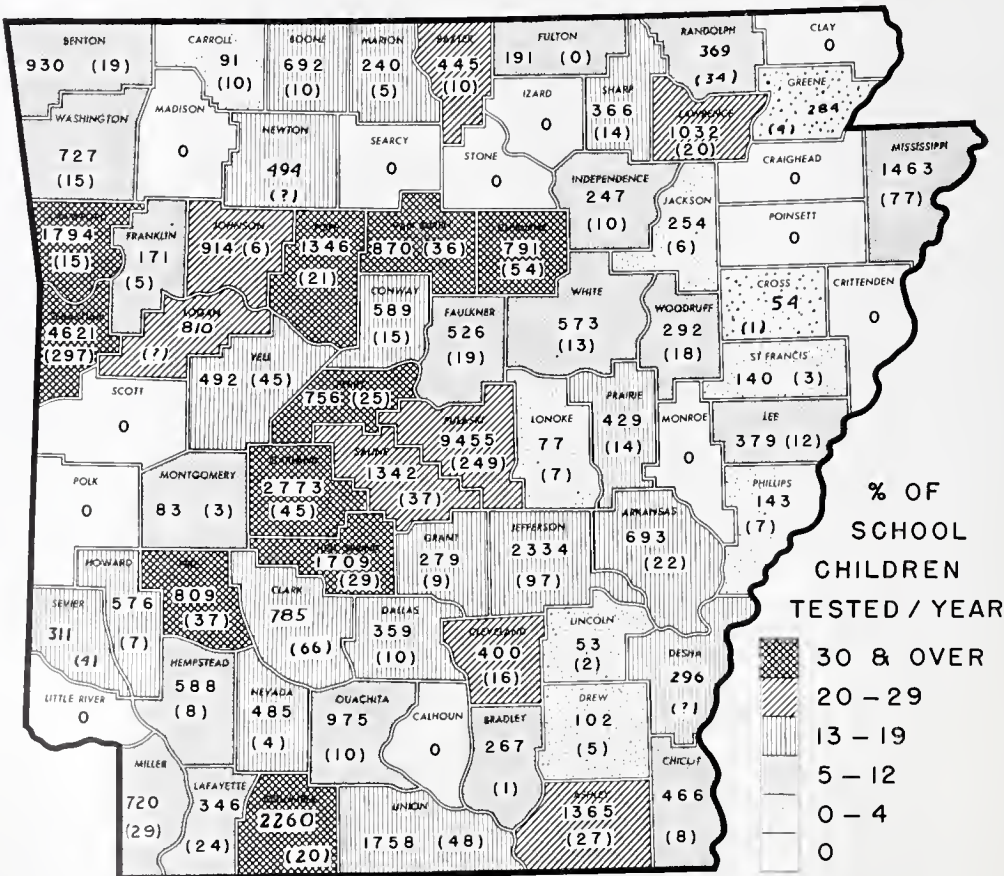
The hearing conservation program in Arkansas schools during the past ten years has been directed by the Division of Maternal and Child Health. This program, like the vision conservation program, was established to fill an obvious need to find those children with hearing problems which might reduce their full utilization of educational opportunities.

Following the recommendations of a committee from the Eye, Ear, Nose, and Throat Section of the Arkansas Medical Society, the State Health Department established standards and referral criteria. The portable pure-tone audiometer was selected as the test instrument because of its relative simplicity and ease of operation and because it would insure a stand-

ardized test for every child. The State Health Department purchased a number of these instruments and lends them free of charge to the schools.

Each child is tested individually. The screening test consists of presenting to the child, through earphones, pure tones at 250, 500, 1000, 2000, 4000, and 8000 c.p.s. at an intensity level of 20 decibels. If the child fails to respond at 20 decibels, the intensity level is raised to 30 decibels; if he responds at that level, the intensity level is reduced to 20 decibels and the tone is presented again. Any child who fails to respond to two or more of the six frequencies at 20 decibels in either ear is scheduled for a retest to be given two to three weeks later, allowing time

## HEARING TESTING PROGRAM IN ARKANSAS SCHOOLS



STATE BOARD OF HEALTH

KEY: 381 = NUMBER OF CHILDREN TESTED  
(12) = REFERRED TO PHYSICIAN  
AVERAGES PER YEAR, 1954-57



## FEATURES

for colds or other temporary conditions affecting the hearing to clear up. If he again fails the screening test, he is given a complete threshold test and an audiogram is made showing the results. Ordinarily, the threshold test is given by the Public Health Nurse, in some cases by a very well trained volunteer. If the audiogram still shows failure to hear two or more of the six frequencies at 20 decibels in either ear, a copy of the audiogram is sent to the parents with a letter of referral suggesting that the child be taken to a physician for an examination.

Schools desiring a hearing screening program make their requests through their local health departments or directly to the State Health Department. The schools must agree to furnish a quiet place for the tests and a number of selected lay volunteers who can be trained to do the testing. A consultant from the State Health Department or the local Public Health Nurse trains these volunteers and checks the results of the volunteers' tests before referrals are made.

Special care is taken to impress upon school officials, teachers, parents, and the children the fact that the hearing screening tests are by no means complete and final. Some children who fail the test at school may be found to be without hearing problems upon examination by a physician. Every effort is made to avoid unnecessary referrals for physical examination.

In conjunction with the screening program, schools are urged to teach a unit on the ears and their care.

Since the beginning of this program, reports have been received showing that 309,643 children have had hearing tests. Of this number, 8,798 children were reported as having failed the test and as having been referred for examinations by physicians. These figures contain some duplication where children have been tested in more than one year. The reports for the 1957-58 school year are not complete and have not been included in these totals.

# Editorial

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## Post Graduate Training A Real Necessity

ALFRED KAHN, JR., M.D.

The pace of modern medicine is so rapid that the graduating physician will soon find his medical ideas out of date if he does not have a continuing program of study. Fifty years ago when the pace of medical development was slower, doctors could be more casual and leisurely about their graduate training — less happened, and their training was largely by experience in dealing with patients.

Today, the vast amount of money poured into medical research has dramatically accelerated developments in this field. For example, new and better antibiotic drugs are continuously being developed, better surgical techniques are devised, new instruments are invented, etc. Only through post graduate training can the modern physician hope to keep up with the current advances in medicine.

The American Academy of General Practice and the Specialty organizations have wisely sponsored post graduate courses and seminars. The former organization has gone so far as to require attendance at a certain number of post graduate training sessions; the desirability of compulsory attendance might be debatable but the worthwhile motivation prompting it is not. Physicians throughout Arkansas have a generally high level of competency; the University of Arkansas Medical School and the professional societies are due much credit for these high standards of practice.

One might wisely speculate on how continued interest in post graduate medical training can be maintained. Paramount in this regard is the offering of good courses taught by well known authorities. In the past, these courses have been offered as lectures and even in-hospital training to small groups. The impact of closed circuit television from a hospital to an outlying group is yet to be evaluated. Transmission of heart sounds, elec-

trocardiography, x-ray pictures and fluoroscopy by electronic means from smaller communities to larger ones is being tried on an experimental basis. Sound transcriptions of recent medical advances are available, and in one instance, are being sent out monthly on tape.

A sound plan of continuous post graduate training in all fields of medicine is a good insurance policy for a high standard of professional competence and this in turn leads to better patient care, the ultimate aim of all medical education.

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## Better Government and the Physician

The necessity for physicians to work with their elected officials is pointed out in a recent Public Relations Department Bulletin from the AMA. This is a very timely suggestion. There are many important legislative matters which affect the public's health; physicians should take a lively interest in these affairs and offer their support or opposition as indicated.

There are some legislative matters peculiar to physicians and only through personal contacts with their legislators can they make their feelings known.

Of interest to all practicing physicians is the necessity of getting tax relief for the retirement years. Industry and labor have vast pension funds. These funds enable the participant to set aside income for his or her retirement at some set age. The physician and other self employed individuals do not have a similar opportunity.

The Jenkins-Keogh Bill and similar legislation sets up a special tax free account into which the individual puts perhaps 10 per cent of his income. Upon retirement the individual withdraws from this account and then pays income tax — presumably at a lesser figure.

Some of the districts in the Arkansas Medical Society, for example, the 10th, have had meetings with their state and national representatives. The legislators are urged to discuss the legislative pro-



gram at these meetings. The doctors at "grass root level" can then discuss their support or opposition to the program. It is also suggested that the Public Relation Committee also contact the legislators on matters of especial interest.

A series of meetings with our legislators would be particularly easy in Arkansas because of geographic and population considerations. All districts and physicians are urged to contact their representatives and make known their stand on legislative matters.

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## Medicine in the News

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### New Study Suggests Possible Cause of Schizophrenia

CHICAGO — A new avenue of investigation into possible chemical causes of the mental illness schizophrenia has been suggested by a Harvard Medical School researcher.

Dr. Samuel Bogoch has found that adult schizophrenics have considerably less neuraminic acid — a component of the brain's gray matter — in the spinal cord fluid than do nonschizophrenics.

In fact, the levels of neuraminic acid in the cerebrospinal fluid of adult schizophrenics is "comparable only to values found in some children under seven years of age."

The low values in adult schizophrenic patients may indicate a form of chemical immaturity of the nervous system. This failure in chemical maturity would correlate well with clinical evidence of a failure of psychological maturity in the schizophrenic, he noted.

### New Book: "Labor Unions And Public Policy."

Physicians who are interested in the legal and economic aspects of organized labor in today's society are invited to read the new book: "Labor Unions and Public Policy."

The book presents four studies by the American Enterprise Association.

The authors are: Dr. Edward H. Chamberlin, chairman of the Harvard Department of Economics; Dr. Philip D. Bradley, for many years a member of the department of economics at Harvard and now a visiting professor at the University of Virginia; Gerard D. Reilly, Washington attorney and current chairman of the labor law section of the American Bar Association, and Roscoe Pound, former dean and professor emeritus of the Harvard Law School.

The studies analyze the legal, economic, and sociologic aspects of the power position of organized labor.

The book may be obtained from the American Enterprise Association, which was organized in 1943 by a group of industrial leaders, members of Congress, and representatives of the academic world. The association's address is: 1012 14th Street, N. W., Washington 5, D. C.

### 52-32 Senate Vote on Technical Issue Sidetracks Keogh Bill

The Senate, in a 52-32 vote on a technical issue, on August 12 sidetracked the Keogh bill to help the self-employed set up retirement plans. Subsequently, it was learned that Senate policy committees of both parties decided to oppose the bill at this time because of the loss of tax revenue it would cause.

However, backers of the bill are continuing their efforts for favorable Senate consideration in view of the overwhelming vote for it in the House. Also, they are encouraged that 32 Senators voted for the measure despite the unfavorable legislative situation and the attitude of party leaders. If passage can't be effected in the days remaining before adjournment, many supporters are convinced that the progress made this year will pave the way for enactment in the new Congress when it meets in January.

The Senate vote developed this way: When a bill for correcting and changing many parts of the tax law came up for debate, Senator Charles E. Potter (R., Mich.) offered the Keogh bill as an amendment. Senator Russell Long (D., La.) and several others took the floor against the Potter amendment, complain-

ing of the tax loss involved, of the fact it was discriminatory, and that the Senate Finance Committee had not studied the legislation.

### White House Conference on Aging Up in Senate

The White House Conference on Aging would be held in January, 1961, under terms of an amendment by the Senate La-

bor Committee to the House-passed H. R. 9822. The Committee reduced from \$50,000 to \$15,000 the maximum grant to any state for holding state aging conference preliminary to the White House meeting. A minimum of \$5,000 would be allowed each state. The House wants the conference held before September 30, 1960. The Senate Committee moved this back to January, 1961.

## LEGISLATIVE BOXSCORE, 85th CONGRESS, 2nd SESSION

July 25, 1958

This boxscore is designed to bring you up to date on the more important health measures pending in Congress. The tempo of legislative activity is expected to increase from now until adjournment. A summary of most of the bills listed here is contained in Special Report 85-9. Bills not enacted into law die with this Congress; many of them will be introduced anew in the 86th Congress convening next January.

SUBJECT	BILL NO.	HOUSE	SENATE
Public Works Loans	S. 3497	Reported 6/6	Passed 4/16
Civilian Pay (VA Doctors)	S. 734	Public Law 85-462, June 20	
Military Pay	H.R. 11470	Public Law 85-422, May 20	
Pub. Health School Grants	H.R. 11414	Public Law 85-544, July 22	
HEW Appropriations	H.R. 11645	Passed 3/27	Passed 6/20
Union Health Plans	S. 2888		
	H.R. 13507	Reported 7/23	
Medical Care for Aged (Forand Bill)	H.R. 9467 and others	Not Included in S.S. Bill Reported	
Med. School Aid	H.R. 6874	Hearings Held	
	S. 1917		In Committee
Chemical Additives	H.R. 13254	Subcomm. O.K.	
	S. 1895		In Committee
Aging Conference,	H.R. 9822	Reported 7/24	
Jenkins-Keogh Taxes	H.R. 10	Reported 7/24	
	S. 3194		In Committee
Hill-Burton Extension	H.R. 12628		
Hill-Burton Loans	H.R. 12694	Passed 6/26	Passed 7/21
Civil Aviation Medicine	S. 1045		Hearings Held
	H.R. 4275	In Committee	
Merger ODM-FCDA	Reorg. Plan No. 1	Went Into Effect July 1	
Defense Reorganization	H.R. 12541	Passed 6/12	Passed 7/18
Medicare Appropriations	H.R. 12738	Passed 6/5	Hearings Ended
Nursing Home Loans	S. 4035	Hearings Ended	Passed 7/11
Presumption of Service	H.R. 413	Passed 7/7	
Connection	H.R. 1143	Passed 7/21	
Research Facilities	H.R. 12876	Subcomm. O.K.	
Fed. Water Pollution	H.R. 13420	Reported 7/17	

**NO ACTION:** Grants and Scholarships for Nursing (H.R. 306); National Compulsory Health Insurance (H.R. 3764); Health Insurance Pooling (H.R. 6506 and H.R. 6507); Public Assistance Amendments (H.R. 10730 and H.R. 11703); Rehabilitation (H.R. 10608 and S. 3551).



## Eisenhower Proposes Near East Health Effort

As one of the points in his Near East development program, President Eisenhower is proposing that the U. S. join with other countries and the World Health Organization in an all-out attack on preventable diseases in the area. He outlined broad plans to the United Nations General Assembly on August 13. Commented the President: "Another great challenge facing the area is disease. Already there is substantial effort among the peoples and governments of the Near East to conquer disease and disability. But much remains to be done." He left for a future date the details of such a program.

## Berry Plan Applications Lag; Draft Calls in Prospect in '59

Because of a steady decline in applications under the Berry plan, Defense Department says it may have to call up men through the doctor draft next year. The only thing that will avoid the draft calls, which have not been used for some time, will be a marked increase in Berry plan applications before September 15. Under the plan, interns volunteer as reserves, and a mutually agreeable date for their call-up following completion of internship is decided in advance. Because of the drop-off in applications, Defense Department has to start plans for use of the draft to meet its requirements as of July, 1959.

## University Catalog Wins Award

The University of Arkansas Medical Center has won two awards in a contest to choose the nation's best university and college publications and photographs.

The 1958 catalog published by the School of Medicine won second place in Division C of the contest which was sponsored by the American College Public Relations Association at its annual convention in San Francisco. There were about 100 entries in the Division from the approximately 400 eligible universities and colleges.

A photograph by Bob Walloch of the Medical Center's Medical Illustrations De-

partment won first place in the photography classification for Division C schools whose enrollments are less than 1,000 students.

Only one other medical school in the nation won any awards in the contest which was open to schools and colleges of all universities and to non-university colleges.

## Teen-agers Shying Away From Socialized Medicine

The Purdue Opinion Panel of Purdue University surveyed thousands of representatives of high school students in every part of the nation to learn what they really know about sound medical principles for keeping fit. The results of that survey were carried in the press recently, and there was one portion of interest to physicians.

The survey report said that families of 70 per cent of today's teens carry health insurance, and it then pointed out that the tremendous growth of private medical insurance programs is credited with turning teen-agers increasingly away from socialized medicine. In the poll on the subject, 52 per cent of young people thought the government should establish a permanent system of providing medical services for all, with 22 per cent opposed and 26 per cent undecided.

But the significant point was that these figures represent a change from opinions expressed in 1948, when 80 per cent of teen-agers approved of socialized medicine, 11 per cent disapproved and 9 per cent were undecided.

## HEW Study of Medical Care Costs For Aged, Asked by Committee

The House Ways and Means Committee, which omitted the Forand hospitalization proposal from its social security bill in its report calls on the Secretary of HEW for a study of the various possibilities for financing medical care of the aged. The Secretary was instructed to have the study completed by February 1, 1959. The Senate Finance Committee next takes up the social security bill, following House passage July 31.

The Ways and Means Committee told HEW to place special emphasis on the possibility of increasing social security taxes to finance purchase (through private or non-profit organizations) of health insurance which would go into effect upon retirement.

In its instruction to HEW, the committee says it is "very much aware" of the problems in paying hospital and nursing home bills for the aged, and notes that a number of bills had been introduced on the subject, and that some witnesses had emphasized that health insurance is "out of reach" of many older people.

### **VA Hospitalization Bill Approved By Veteran Committee**

Winding up several weeks of hearings on hospitalization, the House Veterans Affairs committee on July 30 ordered reported favorably a Veterans Administration bill (H. R. 10028). Coming late in the session, it is not given much chance of passage. However, it could be revived in the next session. Its highlights:

1. Directs VA to operate 125,000 beds for an average daily patient load of 113,000. Present figures are 120,526 operating beds and 111,000 daily load.

2. Writes into law, as first proposed in H. R. 58, the 10-P-10 form which veterans with non-service-connected illness now sign on entering VA hospitals; it gives their financial status. This section also requires reading to the applicant of the criminal code pertaining to false statements under oath.

3. Requires VA to notify the Veterans Affairs Committee during a session of Congress, and at least 90 days in advance, of any plans to shut down a hospital or other VA facility.

4. VA Administrator could refuse to furnish hospitalization to non-service-connected veterans who are eligible under workmen's compensation, industrial accident laws or health insurance plans, if other eligible veterans are waiting for care. The restriction would not apply in emergency cases.

5. Authorizes the administrator to furnish outpatient care for n-s-c cases where necessary to determine if admis-

sion to a hospital is required and where essential to complete treatment incident to hospital care.

### **Budget Bureau Supports Clarification of Veterans' Benefits**

A spokesman for the Budget Bureau informed the House Veterans Affairs Committee on August 6 that the agency believes there is need for clarifying the responsibility of the government to the veteran who needs medical care. Deputy Director Robert Merriam testified that the law is not clear on how hospital beds should be used and for whom.

Pressed on the bureau's withholding of VA funds for hospital beds, Mr. Merriam said the allocation of funds to various federal agencies was dependent upon the needs and requirements of all government departments and not one specific agency. Allocation of funds, he added, was frequently a matter of timing rather than actual withholding. Mr. Merriam insisted that in no instance was any attempt ever made to circumvent the will of Congress by denying necessary funds appropriated by Congress.

### **Army Medical Service To Publish Formulary**

The Army Medical Service Formulary — the first publication of its kind in the history of military medicine — was released in late August 1958 for world-wide distribution throughout the U. S. Army Medical Service.

The new Formulary, published as Technical Manual 8-245, is available on request through regular Adjutant General channels. It will serve as the basic source of reference for clear, concise, and definitive information concerning drugs, both standard and nonstandard, available to military physicians for use in the treatment of disease.

### **Senate Lifts Medicare Restrictions; Issue Now in Conference**

The Senate, at the request of Senator Knowland (R., Calif.), amended the Defense Department Appropriations bill to eliminate House-imposed restrictions that threatened to wreck the civilian phase of the Medicare program. The Knowland



amendments carried by voice vote at a time when the chamber was crowded in preparation for passage of the big Defense bill, but only two or three "nays" were heard. The issue now is in the hands of the Senate-House conference committee, where a decision is expected shortly.

## Doctors Seek Nuclear Radiation Information

At the Opening Plenary Session of the XIIth General Assembly of The World Medical Association, the doctors of the world initiated a campaign to keep the medical profession in every country fully informed on the effects of nuclear radiation. Dr. Louis M. Orr of Orlando, Florida (USA), Consultant at the Institute of Nuclear Studies, Oak Ridge, Tennessee and President-Elect of the American Medical Association, addressed the Delegates on the subject "The Biological Effects of Nuclear Radiation". He reported that:

Current nuclear experiments show air and soil contamination being reduced below the danger point to both man and animals

The public faces greater dangers of radiation from the improper, frequent or prolonged use of x-ray than from nuclear experiment "fall-out"

Medical and industrial progress necessitates continued nuclear experimentation as a means of furthering progress in making nuclear energy useful to mankind.

## AMA to Survey Legal Profession

A survey of attorneys on various subjects of mutual interest to physicians and lawyers will be conducted early this fall by the AMA's Law Department. Approximately 10,000 lawyers will be asked to answer questions on interprofessional relations, medical professional liability and expert medical testimony. The need for such a study is evidenced by the fact that as high as 80 per cent of all cases tried today require medical testimony and that seven out of 10 personal injury cases are decided on medical rather than legal considerations. The medical profession should be aware of the problems of at-

torneys and the role of medicine in the judicial system. It is hoped that this information can be used to promote good working relations between physicians and attorneys.

## Senate Bill with Self-Employment Annuity Plan Up for Action

Action is imminent in the Senate Finance Committee on a bill to aid small business that also contains authority for tax deductions for retirement programs similar to the Jenkins-Keogh principle. Thus Congress now has a choice between this measure and the Keogh bill (H. R. 10), which has been officially approved by the House Ways and Means Committee. **While the Keogh bill's provisions are more liberal, enactment of either would establish the type of tax deferral retirement program the doctors and other self-employed have been attempting to obtain for years.** Here are the major differences.

The **House** bill (H. R. 10) would limit tax-deferred setaside to 10 per cent of employment income or \$2,500 per year maximum; the **Senate** bill (Section 3 of S. 3194) would have a \$1,000 annual limit. Lifetime maximum setaside under the **House** bill would be \$50,000, under the **Senate** bill \$1,000 could be set aside every working year. Under **both** bills, persons 50 years of age at the time the law goes into effect could add 10 per cent more setaside for every year past 50, and under **both** bills the setaside privilege would end at age 70. Under the **House** bill only the self-employed would be eligible, while under the **Senate** bill employed persons who do not benefit from an employer-sponsored retirement plan would be eligible, along with the self-employed.

It is understood an effort will be made to move the House bill to the floor by suspension of rules. Thus the bill would not have to be submitted to the Rules Committee, but it would require a two-thirds vote for passage.

## Restrictions Imposed by Defense Department on Civilian Medicare

The Department of Defense today outlined restrictions to be imposed on civilian Medicare. Here are major changes:

1. Dependents living with sponsors to

use military facilities, unless military facilities unavailable and dependents' cards so certified. 2. Freedom of choice if not living with sponsors. 3. Civilian emergency care continues. 4. Freedom of choice for maternity patients living apart from sponsors. 5. For maternity patients living with sponsors, following applies: New and first trimester patients, as of October 1, must use military facilities in absence of certification military facilities not available. Second and third trimester patients, if under civilian care October 1, may continue, but if a change of physicians is made the patient must use military facilities in the absence of certification military facilities unavailable. 6. All services "not clearly specified in law" discontinued in civilian facilities for patients living with or apart from sponsors. These discontinued services include non-hospital injuries, termination visits prior to hospitalization, tests before and after hospitalization, well-baby visits, nervous and mental diseases and elective surgery. 7. In areas having more than one military facility, clearing houses will assure optimum use of all service hospitals.

### **VA Hospital Care Limitations Urged by AMA and AHA**

American Medical Association and American Hospital Association want Congress to spell out who is entitled to Veterans Administration hospitalization. The AMA thinks the basic policy should be this: the best possible care for veterans with service-connected disabilities or illnesses in VA installations; non-service-connected illness, if the veteran is unable to pay for his care, to be the responsibility of community governments. The AHA suggests a statutory ceiling of 131,000 beds and the closing of unnecessary facilities.

The two organizations testified July 24 before the House Veterans Affairs Committee which has been holding extensive hearings on VA hospital policies and practices. The day previously the committee heard from the American Legion, which maintained that the present policy should be continued, i. e. where beds are available, non-service-connected veterans to get VA care when they state they can't

afford to pay for private care. Said the legion witness: "... realism and the uncertainties of the future would demand the preservation of the VA system of hospitals."

### **Little River Memorial Hospital**

The dedication service and formal opening of the Little River Memorial Hospital was held Sunday afternoon, July 20, 1958. Rev. William McLean, pastor of the Presbyterian Church, Texarkana, Ark., delivered the dedicatory address. Dr. J. T. Heron, Director, Arkansas State Board of Health, cut the ribbon across the main entrance to officially open the new hospital. This is a 30 bed general hospital with facilities sized and arranged so that it can be expanded to 50 beds in the future.

### **House Passes Research Facilities Extension**

The House under suspension of rules on August 5 passed and sent to the Senate H. R. 12876 which extends for three years the \$30 million a year grants act for construction of research facilities in the fields of crippling and killing diseases. The program has been in operation two years and was due to expire next year. The House was informed that all of the \$90 million authorized and appropriated under the original act either has been spent or committed. After first formally approving a section of the bill that would authorize grants for facilities intended for both research and teaching, the committee reversed itself and dropped this provision. Rep. Mack (D., Ill.) expressed the hope that Congress next year would make this one of its first orders of business. The bill is now before the Senate Labor and Public Welfare Committee.

### **New Legislative Counsel For the Society**

At its meeting on November 24th, 1957, the Council of the Arkansas Medical Society appointed a special committee headed by Dr. Joe Shuffield to find and employ a successor to Mr. Peter Deisch, resigned, as legislative counsel for the Society.

Dr. Shuffield's special committee announces that it has secured the services of Mr. Lawrence Blackwell of Pine Bluff, a former member of the Senate.



# ANNOUNCEMENTS

## Twenty-eighth Annual Fall Conference of the Oklahoma City Clinical Society

The Oklahoma City Clinical Society will open its twenty-eighth annual three day Conference at the Biltmore Hotel on October 27, 1958.

An outstanding program of postgraduate teaching has been arranged. This includes lectures and discussion by fifteen distinguished guest speakers selected from various medical and teaching centers throughout the nation. In addition to the general assemblies there will be specialty lectures, a clinical pathologic conference, and daily luncheon roundtable question and answer sessions.

## Second Medical Cruise To the Caribbean

The University of Texas, Postgraduate School of Medicine announces its Second Medical Cruise to the Caribbean. Five outstanding lecturers experienced in teaching postgraduate courses have been obtained for the cruise representing fields of medicine, radiology, surgery, obstetrics and gynecology and pediatrics. The cruise (May 5 to 18, 1959) will sail from New Orleans on the M. S. Stella Polaris. Twenty-five hours of scheduled teaching will be offered. Inquiries should be directed to The University of Texas, Postgraduate School of Medicine, Houston 25, Texas.

## The National Conference On Air Pollution November 18-20, 1958

Air pollution is becoming increasingly serious as population growth and industrial expansion add to the volume of pollutants discharged into the far-from-limitless ocean of air that surrounds us. Although the problem has recently received considerable attention from governmental bodies as well as from industries and voluntary organizations, there has been no opportunity for representatives of all

these groups to meet together to assess their progress and to develop a coordinated plan for future action. This is sponsored by the Department of Health Education and Welfare and is to be held at the Sheraton-Park Hotel, Washington, D. C.

## A Clinical Conference on Cancer Chemotherapy

The University of Texas M. D. Anderson Hospital and Tumor Institute and The University of Texas Postgraduate School of Medicine will present the third annual clinical conference on cancer chemotherapy November 14 and 15, 1958, at The University of Texas M. D. Anderson Hospital and Tumor Institute, Texas Medical Center, Houston.

## Cancer Symposium

Symposium on Carcinoma of the Colon and Rectum will be presented at the Annual Scientific Session of the American Cancer Society to be held October 20-21, 1958, at the Biltmore Hotel, New York, N. Y.

## American Association of Medical Assistants

The Second Annual Meeting of the American Association of Medical Assistants will take place October 31, November 1 and 2, 1958, at the Palmer House, Chicago, Illinois. All Medical Assistants are cordially invited to attend.

## THE WILLIAM AND LOLA HEUERMANN CANCER RESEARCH FELLOWSHIP AT The University of Texas M. D. Anderson Hospital And Tumor Institute Houston, Texas

This Fellowship is established in memory of William Heuermann of San Patricio County, Texas, who bequeathed a portion of his estate for Cancer Research at The University of Texas M. D. Anderson Hospital and Tumor Institute.

The fellowship, for research in the field of Experimental Surgery, will be award-

ed to the applicant considered best qualified by a committee appointed by the Director of M. D. Anderson Hospital and Tumor Institute.

### American College of Surgeons Open Meetings

All members of the medical profession are invited to attend any of the 1959 Sectional Meetings of the American College of Surgeons. Cities and dates are:

Charleston, South Carolina, January 19, 20, 21

Houston, Texas, February 2, 3, 4

Vancouver, British Columbia, February 26, 27, 28

St. Louis, Missouri, March 9 through 12 (Four-day meeting; Joint Nurses Sessions)

Montreal, Quebec, April 6 through 9 (Four-day meeting; Joint Nurses Sessions)

Sectional Meetings are planned by local committees, and are designed to answer the needs and wishes of doctors within the meeting area. Panels, symposia, reports, medical motion pictures, and question and answer sessions characterize the programs, with surgeons of outstanding ability serving as teachers and lecturers.

### New Members —

The Independence County Medical Society announces that **Dr. Olen W. Bridges** was added to its roster of members in July 1958. A native of Hollywood, Arkansas, Dr. Bridges received a B.A. degree from the Henderson State Teachers College at Arkadelphia in 1951 and an M.D. degree from the University of Arkansas School of Medicine in 1957. He has just completed his internship at St. Vincent's Infirmary in Little Rock and has opened his office at 181 South Broad Street in Batesville.

**Dr. Irvin L. Carlton** has transferred from the Jefferson County Medical Society in Missouri to the Lee County Medical Society. He previously practiced in Marianna in 1954 and was a member of the Society at that time. Dr. Carlton is a native of this State, having been born in Black Oak. He received his B.S. degree

from Arkansas State Teachers College in 1948 and was graduated from the University of Arkansas School of Medicine in 1953. Dr. Carlton's office is located at 18½ South Poplar in Marianna and he is a general practitioner.

**Dr. Bob L. Slaughter** was accepted as a member of the Independence County Medical Society in August. A general practitioner, Dr. Slaughter's office is located at 423 East Main Street in Batesville. He is a native of Sheridan, Arkansas, and received his preliminary education at Henderson State Teachers College—from which he obtained a B.A. degree in 1952. Dr. Slaughter was graduated from the University of Arkansas School of Medicine in 1957 and interned at St. Vincent's Infirmary in Little Rock.

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## Obituary

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**Dr. William J. (Billy) Sheddan**, an Osceola physician, was killed July 24, 1958, in a head-on collision on Highway 61 at West Memphis. Dr. Sheddan was born in 1892 at Osceola. A graduate of Kentucky Military Institute, Linden, Ky., he completed his medical training at University of Tennessee Medical School in 1915 and interned at St. Joseph's Hospital in Memphis. During World War I he was a first lieutenant in the medical corps and served as a surgeon on a transport ship carrying troops to France. Dr. Sheddan was an Osceola city alderman at the time of his death and chief of staff at Osceola Memorial Hospital. He was past president of the Rotary Club, a member of the Masonic Order and a Shriner. Survivors include his wife, Mrs. Louise Semmes Sheddan; one daughter, Billie Fain Sheddan, and four sisters.

**Dr. Hugh Franklin Mayfield**, 78, died at his home in Huttig July 30, 1958. Dr. Mayfield had practiced medicine in Union County for 53 years. He was the physician for the Union sawmill at Huttig for 35 years and had been practicing at his home for the last 12 years. He was



born May 5, 1880, in Caledonia. He graduated from the University of Tennessee and was a member of the Methodist Church in Huttig. He is survived by his widow, Mrs. Mary Elsie Mayfield; one daughter, Mrs. Relda Gorvell of Arlington, Va.; one brother and three sisters.

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## PERSONALS AND NEWS ITEMS

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Many physicians are relocating around the state. **Dr. Bob Slaughter**, a native of Sheridan and a graduate of the University of Arkansas School of Medicine has opened offices in Batesville. After practicing the past three years at Bauxite, **Dr. Wm. C. Page** is now associated with **Dr. Jack Cash** in the Cash Clinic at Corning. **Dr. Giles A. Sexton**, a former resident of Forrest City, has returned to that city to open an office. He recently has been engaged in graduate work at Barnes Hospital in St. Louis. Another new physician in Forrest City is **Dr. J. E. Cross**, who is at the Crawley-Cogburn Clinic. **Dr. Wm. D. Robertson**, formerly of Piggott, is now associated with the Crow Clinic in Warren. He was recently discharged from the Air Force. After three years absence, **Dr. I. L. Carlton** is returning to Marianna for general practice and surgery.

Two physicians have joined the staff at the Benton Unit of the Arkansas State Hospital. They are **Dr. William F. Shearer**, who is on the medical staff, and **Dr. Jacob Shapiro**, who joined the staff as psychiatrist.

**Dr. M. C. John, Jr.**, is the new chief of the medical staff at Stuttgart Memorial Hospital. **Dr. E. A. McCracken** is the vice chief of staff and **Dr. Paul H. Millar** is secretary.

**Dr. Howard K. Suzuki** and **Dr. Lowell M. Duffey** have been named to the staff of the Anatomy Department at the University of Arkansas Medical Center. **Dr. Suzuki** has been an instructor at Yale University since 1955 and **Dr. Duffey** was an instructor of embryology at Kansas

State University in 1953 and was awarded his doctorate this year at the University of Indiana.

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## *Proceedings of Societies*

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The Fifth District Medical Society met in Camden at the Camden Hotel in dinner session Tuesday night, September 30.

The speaker was Mr. Aubrey Gates, new Director, Division of Field Service, of the American Medical Association. Mr. Gates spoke on "What's Ahead for the Medical Profession."

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## *Woman's Auxiliary*

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Mrs. Raymond McCray was elected president of the Hot Spring County Medical Auxiliary for the coming year at a meeting last week in the home of Mrs. Paul Means. Other officers elected were Mrs. C. F. Peters, vice president; Mrs. R. E. Peeples, secretary and treasurer; and Mrs. Russell Cobb, reporter.

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## BOOK REVIEWS

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**HOW TO WRITE SCIENTIFIC AND TECHNICAL PAPERS.** Sam F. Trelease. The Williams & Wilkins Co. Pages: 185. 1958. \$3.25.

This excellent guide to the writing of scientific papers would be invaluable to any physician contemplating writing a medical paper. It explains how to use a library, statistical methods, arrangement, drawing, abbreviation, etc. This is not the type of book that one would sit down and read through like a novel. It is more an outline type of handbook and is more valuable for that reason. It is quite concise, numbering only 185 pages. This book is heartily recommended to medical authors.—AK

**GIFFORD'S TEXTBOOK OF OPHTHALMOLOGY.** Francis Heed Adler, M. D. W. B. Saunders Co. Philadelphia and London. Pages 499. April 11, 1957. \$8.00.

This standard textbook is now edited by Dr. Adler and is in its sixth edition. It continues the high standards set by Dr. Gifford. A special ef-

fort is apparent in this textbook to relate diseases of the eye to diseases of the body as a whole. This is a most important concept in the teaching of any limited specialty. Even in this excellent book, this facet could be expanded. The illustrations are excellent. There is a brief chapter on therapeutic agents used in ophthalmology and a very brief chapter on ocular injury. This book is highly recommended.—AK

**CHEMISTRY AND BIOLOGY OF MUCO-POLYSACCHARIDES: A Symposium**, CIBA Foundation; Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B. Ch. and Maeve O'Connor, B.A., Illustrated; Pp. 323. 1958; \$8.50, Little Brown & Company, Boston.

CIBA Foundation has endowed numerous scientific discussions to bring together medical and chemical research workers who by reports and comparisons may stimulate new thought and open new fields of biological study. This book is the report of one of these symposia and, as is indicated, concerns itself with studies on the nature of the mucopolysaccharides. It touches the general nature of these substances, their synthesis, their pharmacology and their relationship to the blood plasma, to the blood groups, to the production of urine, and to many other of its effects both in the test tube and in the living organism.

Definitely a hand book reference work for the research worker and for the active teacher who is engaged in trying results of our laboratories into the practical use of the practice of chemistry and medicine.—FR

## Answer—What's Your Diagnosis?

### ANATOMY AND DIAGNOSIS

#### TIBIA OSTEOID OSTEOMA

**CLINICAL DATA:** C.C. Pain over middle left tibia for two months. P.E. Swelling over shaft of left tibia 5 x 5 cm.

**SURGERY:** Excision of Tumor.

**PATHOLOGY:** Osteoid Osteoma.

**X-RAY FEATURES:** June 8, 1949 marked periosteal and cortical sclerosis of middle one-third of shaft of left tibia on medial and posterior aspect associated with small zone of bone destruction. Later film showing bone after surgical removal of osteoid osteoma.

\*University of Arkansas Medical Center Department of Radiology.

## TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

### Resection for Pulmonary Tuberculosis

A Four-Year Follow-up Study, D. Bonta Hiscoe, M.D., William F. Thompson, M.D., Thomas J. Enright, M.D., and Harrison Black, M.D., *The New England Journal of Medicine*, May 1, 1958.

- The long term results of resection for pulmonary tuberculosis is given detailed examination in a series of 80 cases.

During the past decade, the use of anti-tuberculous chemotherapy in conjunction with pulmonary resection has revolutionized the treatment of pulmonary tuberculosis. As with any chronic disease, an evaluation of results can be considered significant only if a reasonable time has elapsed after treatment. Although there are exceptions, the majority of cases reported have been followed for a very short period. As a result the validity of the conclusions may be open to question. More protracted studies have shown that late reactivations after resection are not uncommon.

In the present study only cases which were followed for a minimum of four years have been considered. To adhere to this requirement it has been necessary to consider patients treated in an era when the number of antituberculous drugs was limited, and their proper use not well understood. In addition, previous collapse therapy was employed more frequently among these patients than in current candidates for resection.

*General Statistics.* All cases in which pulmonary resection was performed at the Veterans Administration Hospital, Rutland Heights, Massachusetts, between January 1, 1949, and January 1, 1953, were reviewed. During this period 93 resections were performed on 89 patients. Nine cases were excluded from the study either because of inadequate information, or because bilateral resections had been done. Thus,



the study group comprises 80 patients who underwent unilateral pulmonary resection. They have been followed for an average of five years and nine months (range of four years to seven years and ten months).

*Age, Sex and Race.* This group of patients is obviously not representative of the tuberculous population in general because of the requirements for admission to a Veterans Administration hospital. The great majority of these patients were young white males, between the ages of twenty and forty years.

*Type of Disease.* Many of the patients at the time of operation could not be classified as optimal candidates for surgery by contemporary standards. Of the 80 patients who underwent resection, 42 had bilateral involvement, the contralateral disease being stable. Fifty-four resections were done for open lesions, and 12 for closed lesions, and in 14 the status of the cavity was indeterminate. More significant, however, is the fact that 62 of the 80 patients (77 per cent) had *positive sputum* either by culture or by smear within three months before operation.

*Indications.* Fifty-seven per cent of these patients were operated on for *stable residual lesions*. A lesion was placed in this category if no change was noted for three months or more on serial roentgenograms. A relatively high proportion (23 per cent) underwent resection for what was considered to be relatively *unstable cavitary disease*, which included all patients whose roentgenograms had changed within three months of the time of surgery. Twenty per cent had resection for thoracoplasty failure. The operation performed most frequently was lobectomy.

*Chemotherapy.* It is important to stress the fact that, although only four years have elapsed since the last of these resections were performed, the philosophy of treatment has changed drastically during this time. During the period of this study the chemotherapy consisted for the most part of streptomycin, usually used with para-aminosalicylic acid. The use of chemotherapy was erratic, some patients receiving long, and others short courses. Most patients were given more chemotherapy post-operatively than preoperatively.

*Prior Collapse Therapy.* A relatively large number of patients had received collapse therapy before resection. Fifty-two patients (65 per cent) had had pneumothorax, pneumoperitoneum or thoracoplasty in various combinations. Eighteen had undergone thoracoplasties, 2 of which were contralateral. *Postoperative thoracoplasty* was used more often between 1949 and 1952 than is the case today. In this series of 80 operations, 45 were followed by thoracoplasties, 23 of which were done to prevent over-expansion of the remaining lung, and not for specific complications.

*Result at Four Years According to Groups.* There were 80 patients who had resectional surgery for tuberculosis and have been followed for four years or more. The 12 patients who showed evidence of activity within six months of operation were considered to have persistence of their disease. Activity appearing after six months was considered a relapse (4 patients). In most cases the criterion of activity was a positive sputum by smear or culture, but in five patients there was radiologic or clinical evidence of activity in the absence of bacteriologic confirmation.

## DISCUSSION

At present 85 per cent of the patients are well and have negative sputum. Only 72 per cent of patients obtained a good result without the necessity of further treatment.

The value of long-term follow-up study is apparent when the bacteriologic relapses are analyzed. Fifteen patients had occasionally positive sputum within the first 18 months after surgery, but in none did a clinical relapse occur. In other words, if these patients are followed long enough, many will achieve a good bacteriologic as well as clinical result.

There were several factors that were unfavorable for elective resectional surgery in the group studied. Nevertheless, 85 per cent of the patients are well, physically active and working or able to work. Even in the presence of a positive sputum satisfactory results were obtained in 69 per cent. The comparative figure for those with a negative sputum is 88 per cent.

The difference in results as related to extent of disease is striking. Ninety-two per cent of the patients with unilateral disease

had a satisfactory result, as compared with only 52 per cent of those with bilateral disease.

Resections for unstable cavitary disease yielded fewer satisfactory results than when the resection was performed for a stable residual lesion.

A prompt conversion to negative after surgery as well as a negative sputum preoperatively was associated with a high expectation of a good long-term result.

The fact that chemotherapy at the time of surgery has a striking effect on end results is well known. The patients who received more than 30 days of preoperative chemotherapy and more than 180 days of total chemotherapy had the best results.

*SUMMARY AND CONCLUSIONS.* A series of 80 resections for pulmonary tuberculosis performed between January 1, 1949, and January 1, 1953, is presented.

Eighty-five per cent of the patients are well and have negative sputum. All survivors have been followed for a minimum of four years.

The majority of poor results were evident within eighteen months of resection.

Seventy-seven per cent of the patients had positive sputum at the time of surgery, and the poor results were concentrated heavily in this group.

All of the tuberculous complications occurred in open-positive cases, and almost a third of such patients had major complications.

A study of the chemotherapeutic regimens further substantiates the importance of adequate preoperative and total drug coverage for resectional surgery.

Postoperative thoracoplasty did not appear to alter results favorably unless done for a specific complication.

The factors that were correlated with a good long-term result were as follows: unilateral disease; a stable residual lesion; negative sputum preoperatively; preoperative chemotherapy for thirty days or more; total chemotherapy for a hundred and eighty days or more; and prompt conversion to negativity postoperatively.



# The JOURNAL

## OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

NOVEMBER, 1958

Number 6

## The Pathology of Chronic Ulcerative Colitis

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Although the pedigree of the disease now termed "chronic ulcerative colitis" probably can be traced back as far as the bloody flux of Sydenham in 1669 (1), it has been only during the past three decades that the entity has come to be recognized as something distinct from amebic and bacillary dysentery, tuberculous colitis and other mucosa-denuding processes affecting the colon. Prior to 1920 almost all pathologic descriptions relating to chronic ulcerative colitis had emerged from necropsy studies, providing information only on the terminal stages of the condition. Even the dreaded complication of secondary carcinoma received little emphasis in the early literature, because either the patients did not survive the long evolutionary period of carcinogenesis or they died at home from what was considered to be colonic strictures, for verification of which necropsy was judged unnecessary.

The illustrations and descriptions with which I shall attempt to indulge your patience this morning concern for the most part material derived from surgically removed lesions, rather than from necropsy specimens. Only by observing such early lesions is it possible to comprehend the life story of this or any other disease.

In their very earliest phases, the lesions of chronic ulcerative colitis are confined

to the mucosa and submucosa of the bowel, the muscular and serosal investments being intact. The proctologist is the first to see such lesions, since in about 90 per cent of cases the disease commences in the rectum and advances toward the cecum. The first signs to be observed are congestion and edema of the mucosa. Almost simultaneously, minute red foci make their appearance. They are photographed here in the transverse colon, since pictorial reproduction of them is difficult to achieve through a proctoscope. The early presence of these minute lesions and the fact that yellowish centers rapidly develop in them have been interpreted as meaning that chronic ulcerative colitis is basically a thrombo-embolic disease.

Microscopically, a typical observation is the presence of multiple small abscesses which, because of their location within the mucosal crypts, have been termed "crypt abscesses." (fig. 1a). Acute and subacute inflammatory foci also are seen to occur in relation to tiny mucosal blood vessels in about 10 per cent of cases. Warren and Sommers have (2) regarded this phenomenon, which they termed "vasculitis," as a specific primary lesion in these cases. Lumb and Protheroe, (3) on the other hand, maintained that the vasculitis is a secondary phenomenon which follows the development of the crypt abscesses. In any event, it is from this point onward that the complications of chronic ulcerative colitis start to become evident.

\*Read at the meeting of the Arkansas Medical Society, Hot Springs, Arkansas, May 7, 1958.

†The Mayo Foundation, Rochester, Minnesota, is a part of the Graduate School of the University of Minnesota.



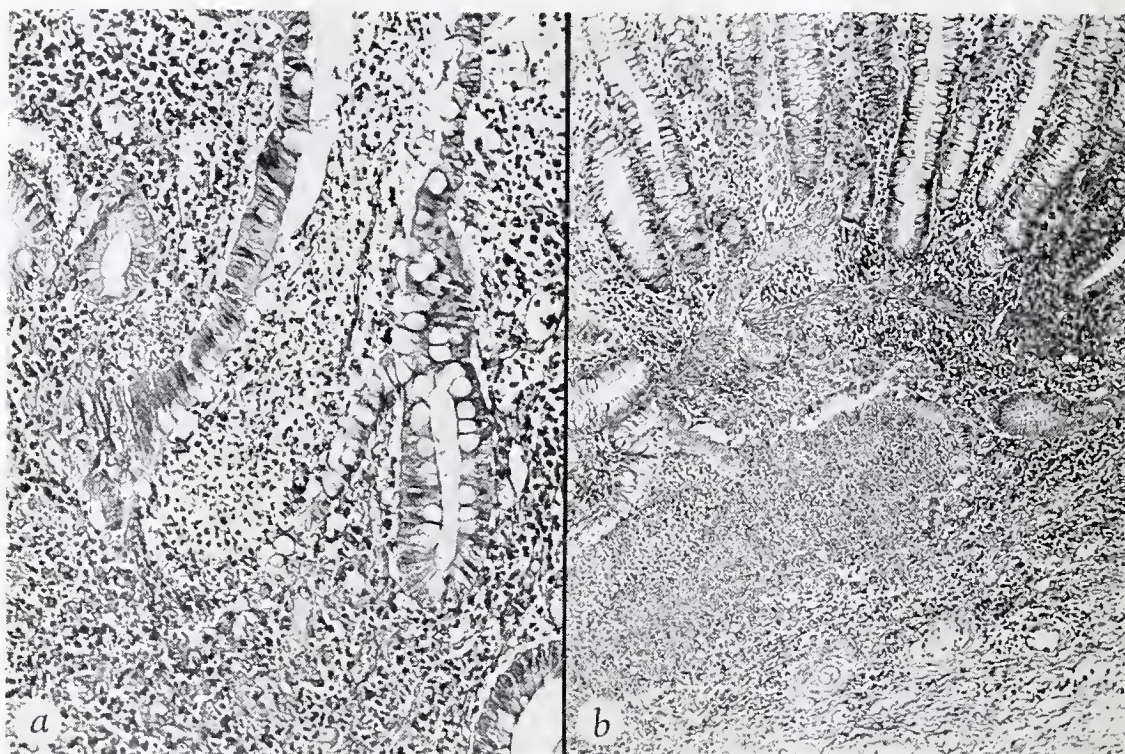


FIGURE 1

As the crypt abscess enlarges, several events may take place. Mucosal eruption with drainage may ensue and the abscess may heal. Unfortunately, however, rupture frequently is from the side, rather than from the neck, of the crypt and the pus dissects laterally (fig. 1b). Fusion of adjacent abscesses interrupts the blood supply of the overlying mucosa, and a large, infected, ulcerating defect results. Infection from adjacent ulcers may undermine the intervening mucosa, leaving necrotic and seminecrotic bridges of tissue which, becoming detached at one end, swing free to form the familiar picture of pseudopolyps (fig. 2a). This eroding process usually extends rapidly or slowly in an orad direction, eventually arriving at the cecum in perhaps 85 per cent of cases and at the terminal reaches of the ileum in about a third of that percentage. In the remaining 15 per cent of cases the disease process appears to be segmental, with some patients exhibiting predominantly right-sided, and others predominantly left-sided, lesions. The basic pathologic process observed in 26 of these segmental lesions which we recently studied was, with some variations to be described later, similar to that observed in diffuse forms of chronic ulcerative colitis.

Following closely on the heels of the micro-abscess phase, just described, sec-

ondary infection of the eroded mucosa develops to complicate the picture. Abscesses give way to deeply eroding ulcers which, in cases of colitis gravis, may readily destroy the muscularis and serosa,

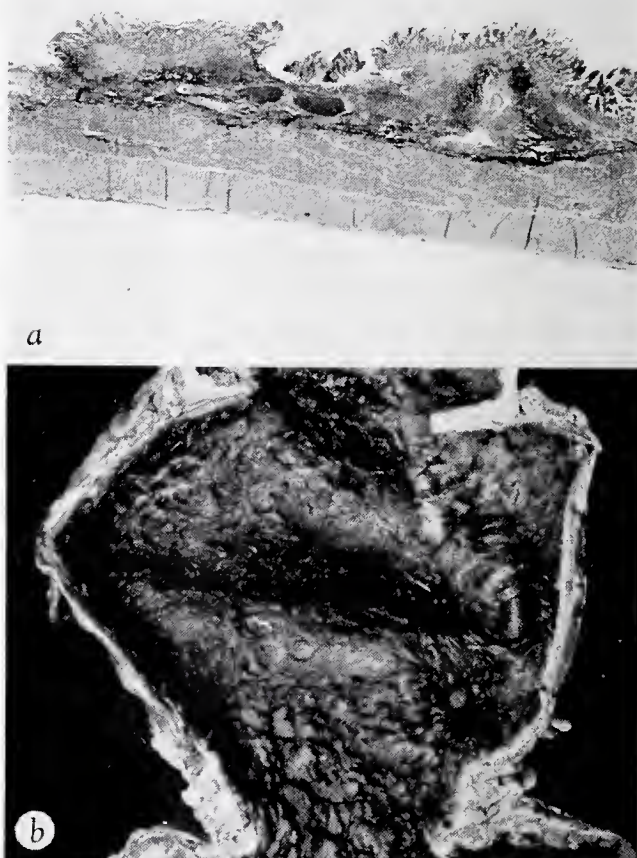


FIGURE 2



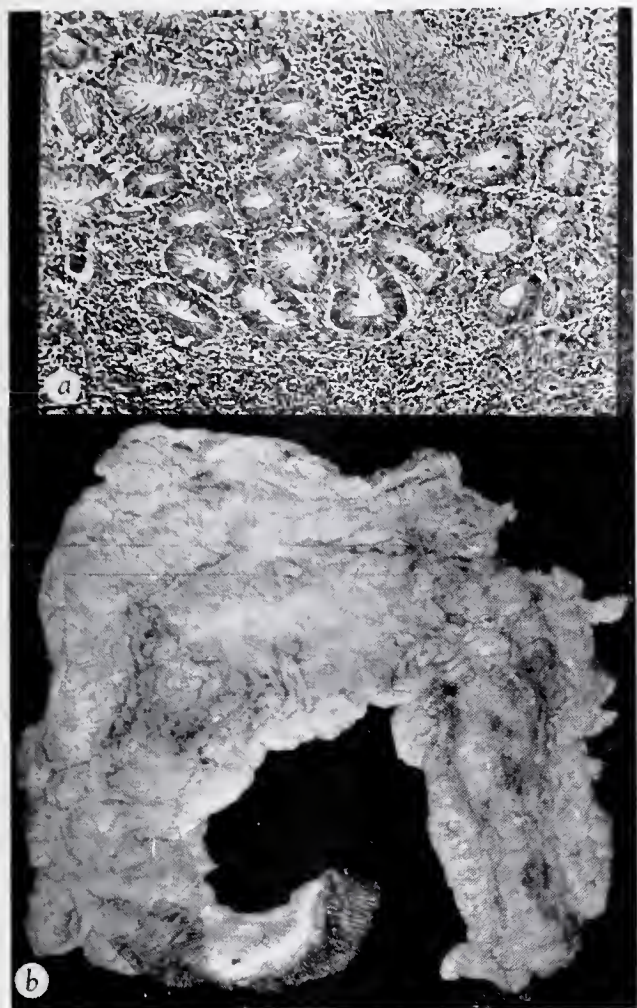


FIGURE 3

with the consequent development of peritonitis (fig. 2b). The polymorphonuclear leukocytic infiltrate of the early phase gradually is replaced by a more chronic reaction featuring plasma cells, lymphocytes, histiocytes and fibroblasts. Remaining islands of epithelium exhibit such spirited proliferation that smears from stools or discharges passing thereover frequently are reported as being positive for malignant cells (fig. 3a). Some pseudopolyps become converted into hyperplastic adenomatous polyps. The simultaneous occurrence of the denuding and healing processes is what accounts for the variable gross and microscopic pictures of the colon when ulcerative colitis is present. Rectal segments exposed to the almost constant passage of infected discharges, often accompanied with much straining, frequently harbor, as a result, deep, burrowing abscesses which lead to the familiar perianal sinuses and fistulas. When, as occurs in the more proximal reaches of the colon, the healing processes gain the ascendancy, the lumen of the bowel is nar-

rowed as a result of fibrosis. A protective coating of fat creeps over the constricting colon, converting it into a shortened and narrowed tube devoid of its normal haustral markings. In certain areas of this tube excessive degrees of fibrosis may lead to formation of stricture, while alongside such narrowed zones reactivation of the smoldering inflammatory process may be proceeding, with re-denuding of the mucosa and the formation of pseudopolyps (fig. 3b).

Mention has been made of the fact that only in later stages of ulcerative colitis are inflammatory elements prominent in the muscular coat. However, even in the early stages of the disease there appears within this zone a remarkable increase in the number of ganglion cells of the myenteric plexus (fig. 4a). Robertson and Kernohan (4) were the first to make this observation. Storsteen (5) more recently studied the phenomenon in detail, and discovered that the increase is real and not merely an apparent crowding of these ganglion cells secondary to marked longitudinal and circumferential decreases in measurements of the bowel. The most logical explanation for the presence of these cells in such increased numbers is that certain small ganglionic cells which normally are present but which never mature are induced to do so as a consequence of the increased muscular activity and hyperirritability of the bowel.

Another phenomenon observed in all coats of the bowel in perhaps 10 or 15 per cent of cases of chronic ulcerative colitis is the presence of noncaseating epithelioid tubercles with giant cells (fig. 4b). These tubercles appear to be more frequently associated with segmental colitis than with diffuse colitis. (6, 7) Certain pathologists have attempted to split off this "tuberculated" form of colitis under such designations as "granulomatous colitis," "tuberculated colitis" and even "regional enteritis of the colon." (8) Clinically, however, no sharp distinction can be drawn which would warrant designation of this form as a separate entity.

As a surgical pathologist I am most interested in the epithelial changes which result from the sequences of destruction and repair, repeated destruction and re-



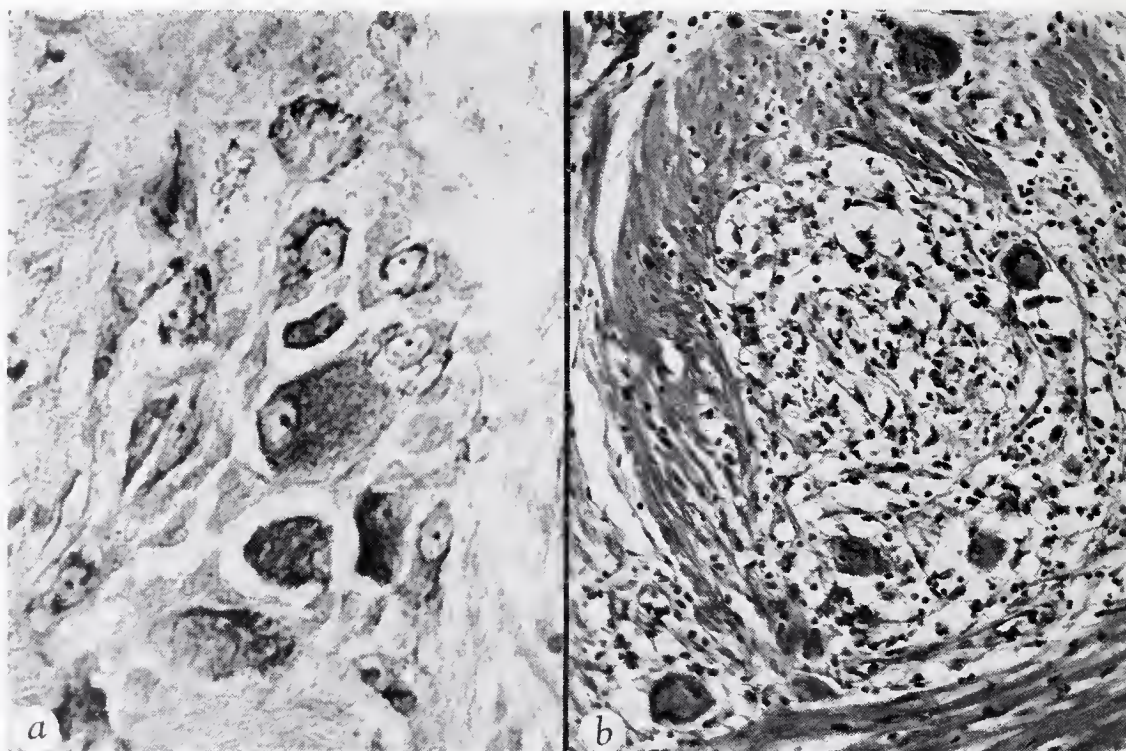


FIGURE 4

peated repair taking place with the exacerbations and remissions which characterize the clinical course of this disease. Such a sequence in the gastric mucosa of persons with pernicious anemia sets the stage for the development of gastric cancer. Such a sequence in cirrhosis like-

wise is carcinogenic with respect to the liver. Many years ago Robertson predicted a sharp increase in the incidence of colonic carcinoma in cases of successfully treated colitis, and time has well borne out his prophecy. Beginning with Yeomans' (9) report of such a complication in 1927, the literature has increasingly emphasized the frequency and the seriousness of this development. It appears that 5 to 10 per cent of patients who are suffering from chronic ulcerative colitis will be afflicted with colonic carcinoma. (10) The onset of colitis during youth, the sequence of frequent recrudescences with relatively short intervals of healing and the complication of formation of pseudopolyps all seem to be operative in the carcinogenic process. We have observed more than 100 patients in whom carcinoma developed on this basis. The lesions of these patients often masqueraded clinically as strictures, the right side of the colon being involved with unusual frequency. The origin of the lesions often was apart from polyps (fig. 5a) and many of the lesions were scirrhous and otherwise unusual, often extending over long segments of bowel, and were multiple in more than 30 per cent of cases. With respect to grading, the lesions were much more active than the average colonic carcinoma. Peritoneum, lymph nodes, veins and liver so frequently were involved that most patients thus

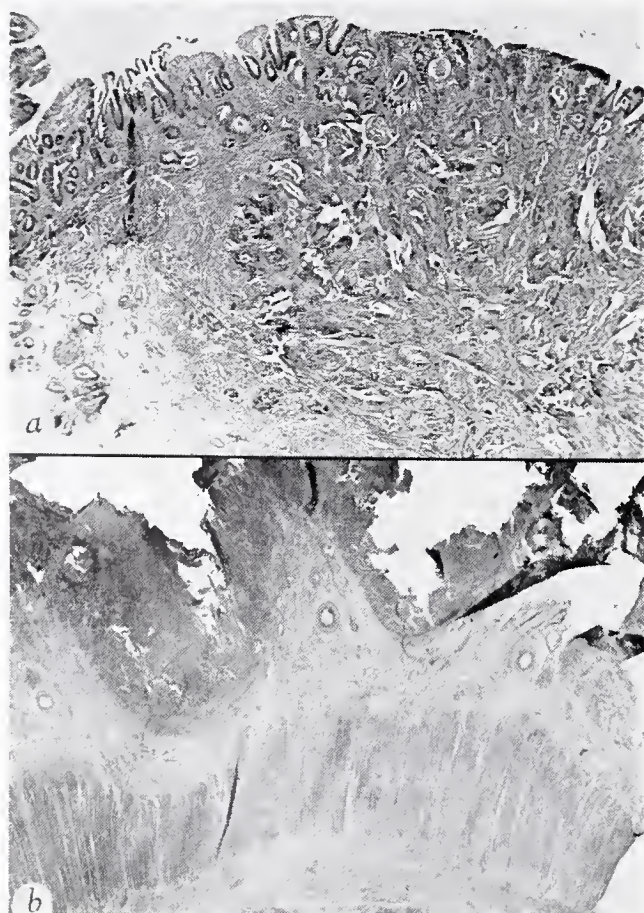


FIGURE 5



affected were beyond hope of surgical salvage by the time the first symptom suggested that a complication in fact existed.

At this point it might be well to attempt an answer to a question which has already been raised in many of your minds, namely: What is the difference, if any, between chronic ulcerative colitis and regional enteritis?

Basically, chronic ulcerative colitis is an ulcerative mucosal disease — when it passes over the ileocecal valve to invade the terminal part of the ileum, as it does in 25 per cent of cases, the ileal alterations likewise are superficial and ulcerative (fig. 5b). One must keep this fact in mind when performing ileostomy in the treatment of colitis, because if the mucosa of the ileum is diseased at the site chosen for placement of the stoma, fatal perforation of the ileum is likely to ensue.

Primary ileitis, as opposed to the just-mentioned "backwash ileitis," (11) is basically an obstructing, cicatrizing, granulomatous, subacute and chronic lymphangitis, with early involvement of all coats of the bowel. Mucosal ulceration is late and usually it is not extensive. The mucosa frequently is corrugated or studded, and crypt abscesses are either absent or few. When ileitis crosses the ileocecal valve to invade the colon, it induces marked inflammatory thickening of all coats of the wall of the bowel just as it does in the ileum. Tubercles can be found in more than 50 per cent of cases, with ordinary search. The segmental distribution of the lesions of regional enteritis is the exception in chronic ulcerative colitis, and the cancerous complications of the latter have not yet been reported as occurring in regional enteritis. The foregoing are but a few differences between the two diseases. Similarities have not been stressed because current emphasis dictates that the two conditions be regarded as separate entities.

We have already mentioned certain local complications of chronic ulcerative colitis such as perforation, peritonitis, perianal fistulas and abscesses, colonic strictures, polyposis and carcinoma. In addition, patients suffering from chronic ulcerative colitis, as from any other ul-

cerative debilitating gastrointestinal condition, could well be expected to exhibit certain secondary phenomena reflected in almost every organ and tissue in the body. Time does not permit more than mere mention of some of the more serious of these sequelae.

Thrombophlebitis may be localized or it may extend into the liver, with or without the formation of abscess. It may be more generalized, with endocarditis. Panarteritis is an occasional complication. Pneumonia is a frequent terminal event. Chronic toxemia and bacteremia may lead to amyloidosis, arthritis, iritis, pyoderma gangrenosum or an unusual form of infectious hepatitis. Chronic loss of blood from the denuded colonic lining may deplete the hematopoietic system and lead to severe anemia, hypoproteinemia and edema with ascites. A severe degree of fatty degeneration of the liver, probably secondary to malnutrition, frequently aggravates the already-existing hypoproteinemic state. Hepatic cirrhosis is observed in 5 per cent of cases of chronic ulcerative colitis. Chronic interstitial pancreatitis frequently is an associated complication of uncertain causation. Tubular and glomerular changes share with a high incidence of pyelonephritis and nephrolithiasis a somewhat uncertain relationship to loss of electrolytes on the one hand and of chronic infection on the other. Finally, necropsy studies of patients who have succumbed to the ravages of chronic ulcerative colitis show that a combination of many of these deleterious influences appear to have combined in producing a fatal result.

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#### Legends

Fig. 1. a. Typical microscopic appearance of a crypt abscess, showing destruction of the adjacent epithelium of the crypt (hematoxylin and eosin; x140). b. Rupture of crypt abscess with dissection of purulent exudate underneath the muscularis mucosae (hematoxylin and eosin; x75).

Fig. 2. a. Irregular destruction of the mucosa. The semi-undermined islands of tissue between the ulcers often project in the form of pseudopolyps. Note that the disease process is confined to the mucosa and submucosa (hematoxylin and

eosin; x8½). b. Rectal segment obtained at necropsy of patient with colitis gravis and perforation. Note deep, furrowing ulcerations.

Fig. 3. a. Marked proliferation changes involving the columnar epithelium characterize attempts at healing in chronic ulcerative colitis (hematoxylin and eosin; x110). b. Portion of the right segment of the colon affected with long-standing chronic ulcerative colitis. Note areas of healing, with narrowing almost to the point of formation of stricture. Alongside these zones there is recrudescence of the inflammatory process, with redensation of the mucosa and pseudopolyps.

Fig. 4. a. Marked numerical increase in ganglion cells of the myenteric plexus is a constant alteration observed in the wall of the bowel (hematoxylin and eosin; x400). b. Noncaseating epithelioid tubercles are found in all coats of the bowel wall in 15 per cent of cases of diffuse colitis and in 50 per cent of cases of segmental colitis. Clinically, the presence of such tubercles does not reflect a different course of the disease (hematoxylin and eosin; x200).

Fig. 5. a. Scirrhus adenocarcinoma, grade 2, arising apart from a polyp. Many of these lesions are multicentric and of high degrees of anaplasia (hematoxylin and eosin; x25). b. Backwash ileitis, showing confinement of inflammatory process to the mucosa and submucosa. Ileostomy must not be performed through such diseased ileal segments if perforation is to be avoided (hematoxylin and eosin; x8½).



# Problems of a Mass Screening Program for Uterine Cancer in Arkansas

A. S. KOENIG, M.D.\*

Since the publication of Drs. Papanicolaou and Traut's monograph in 1943, the use of exfoliative cytology in the diagnosis of cervical and uterine cancer has been well established, and it is universally recognized as a useful diagnostic tool in the recognition of early malignant disease. In the intervening years several centers throughout the country have amassed considerable statistical information on the accuracy and the validity of the procedure. Sufficient information has been gathered so that at the present time no further justification need be presented as to its usefulness as a diagnostic method.

One of the greatest contributions the method has to offer is the fact that it provides a means whereby clinically unsuspected cervical and uterine carcinoma may be detected. Information from the cytology program in Shelby County, Tennessee shows that as many as fifty-nine per cent of the cases of carcinoma discovered by the cytological method were clinically unsuspected by the attending physicians. This represents an overall percentage for both invasive and intraepithelial carcinoma of the cervix, and when cases of intraepithelial malignancy are considered alone, ninety per cent were clinically unsuspected before the cytological examination was made. The discovery rate of cervical malignancy in their laboratories is eight cases of uterine neoplasm out of every thousand women examined.

The results of the Memphis and Shelby County program, which is the largest in the nation, have been to a large degree duplicated in other cytology centers throughout the country. With these significant statistics the question immediately arises as to why a similar program should not be extended throughout all parts of the nation and be made available to all members of the adult female population. At first glance, this may seem to

be a relatively simple matter, but it is beset by numerous problems which, for the present, may seem discouraging and frustrating to those of us who would like to see the facilities made available to as many women as possible.

It is well recognized by most workers in the field of cytology, as well as the American Cancer Society, that cytological diagnosis belongs in the pathology laboratory in the hands of the pathologist who, by the nature of his training and specialty, is best qualified to evaluate cytological abnormalities. Any cytology program which is instituted without the pathologist, who is in a position to correlate cytologic studies with histologic material, will have many disadvantages. Principal among these would be the absence of correlation just mentioned.

Some physicians accuse pathologists of dragging their feet in the program of cytology, but I believe that this can be largely refuted by quoting the results of a questionnaire which was submitted to the membership of the College of American Pathologists in 1956. The membership of the College at that time consisted of approximately 2,100 pathologists. Sixty-three per cent of them responded to the questionnaire. These responses indicated that there were at that time 1,044 pathologists in the United States doing cytological diagnostic work; and these men in the year of 1956, evaluated 2,200,000 cases. The information obtained from the questionnaire also showed that an additional 1½ million cases could have been examined with the facilities already in existence at that time without any increase in the number of technicians or pathologists. This indicates that cytological diagnostic services at the present time, are not being used to their fullest capacity. It also suggests that perhaps some of our clinical colleagues are not as anxious to use the advantages of cytological diagnosis as some of them would lead us to believe.

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† Presented at the Cancer Society Symposium, May 4, 1958, Hot Springs, Ark.

One of the major stumbling blocks to the establishment of any mass screening program is the lack of qualified personnel to conduct the program. Rather than attempting to bore you with statistics on a national level, I shall try to present the problem as it exists in our own state of Arkansas.

Women over the age of thirty-five represent approximately 21.5% of the total population of the United States. If we apply this percentage to Arkansas, where there is a total population of approximately 2,000,000 people, we find that within our state there are approximately 430,000 women over 35 years of age. Many of the advocates of mass screening programs urge that all women over the age of thirty-five should have an annual cytological examination to determine whether or not there is any suspicion of uterine cancer. If this procedure were followed it would be the goal, therefore, of a screening program within our state to annually obtain smears on 430,000 women. A brochure of the American Cancer Society published in 1956, shows that at that time there were six pathologists in Arkansas who were offering cytological diagnostic service. At the present time, I know of four additional pathologists who are doing cytological work, making the present total of pathologists in the state doing cytological work, ten. This means that, with our present facilities, if 430,000 cases were to be examined annually it would represent 43,000 cases per pathologist and, when broken down, it would mean that each pathologist in the state would have to examine approximately 118 smears every day of the year including Sundays and holidays. In as much as one cannot effectively screen more than thirty cases per day, it wouldn't leave much time for sleep or recreation. The only way in which such a mass of material could possibly be covered would be for each of the ten pathologists to have available for his use four trained cytotechnologists. If the pathologist only looked at the problem smears, which occur about once in every twenty-five cases examined, he would still have to look at smears on approximately four cases each day, every day of the year. The cytotechnologists also would

have to spend 365 days of the year at their work.

Another problem which would have to be surmounted is that involving technical details in obtaining the vaginal smears and transmitting them to the cytology laboratory for evaluation. The Memphis program uses only smears aspirated from the vaginal pool, and has not attempted to utilize cervical smears in conjunction with the vaginal smears. Their purpose in this respect was to make the procedure as simple and as foolproof as possible for the physician obtaining the material for cytological evaluation. I am sure that Dr. Erickson would be the first to admit that if good cervical smears were available, they would add considerably to the percentage of recoveries they have experienced in the Memphis program. Dr. Emerson Day of the Strang Clinic at Memorial Hospital has shown that in their material, half of the total cases of cervical cancer were missed when the vaginal smear was used alone. This indicates that a mass screening program without the use of the cervical smear leaves something to be desired. What sense of security, if any, can one have if the patient is not given the benefit of the best possible examination? I can understand why Dr. Erickson's group did not include cervical smears in their material. If their experience has been anything like mine, the cervical smears are oftentimes of little value because of the manner in which they are prepared by the clinician.

Another of the technical problems to be surmounted is the transmission of the vaginal smear from the examining physician to the cytology laboratory. Cytological preparations do not lend themselves too well to long distance evaluation by mail. It is most desirable for them to be submitted to the laboratory without having been removed from the fixative. If they are allowed to dry, there is sufficient distortion of the cellular morphology to make a reliable evaluation risky. One of the most commonly used methods of preparing smears is to place a drop or two of glycerin over the surface of the preparation after it has been fixed and then another slide dropped over the smeared surface. By this method the cytology is well preserved but, at



least in our laboratory, we have experienced some loss of material when the slides are replaced in the fixative solutions and separated. Other methods of fixation to prevent drying consist of the use of Propylene glycol in the fixative solution or flooding the surfaces of the smear with Diaphane. We have had no experience with the last named method, but it has been used in Dr. Papanicolaou's laboratory and he states that he finds it very satisfactory.

It seems to me that for an area such as Arkansas several cytology laboratories distributed over the state would be more desirable than one large central cytology laboratory. At least the laboratories would be closer to more of the doctors, avoiding the necessity for mailing many of the smears.

Another problem to be overcome in any large scale screening program is the cost. The bill for the cytology examination is going to have to be paid by someone. What will be the source of these funds? In this respect I think certain fundamental tenets of the practice of medicine should be emphasized. The American Medical Association and the American Cancer Society as well, in their support of this program, both maintain that the physician — patient relationship must be preserved. We pathologists also feel very strongly that cytological diagnosis, as well as the rest of our specialty, represents the practice of medicine, and any program which might be instituted must of necessity be conducted in a manner in which the physician-patient relationship, which includes the pathologist, will not be disturbed. It is for this reason, that I personally am unalterably opposed to the use of public money or the utilization of a state or federal agency for the establishment and control of a cytology diagnostic center, not only in Arkansas, but in any part of the country. This philosophy is maintained by the American Cancer Society, which makes funds available to assist in the establishment of cytology diagnostic laboratories, but maintains that such laboratories must become self sustaining as quickly as possible.

One argument which has been used in favor of the establishment of a cytology screening center with public funds is that

the service will then be freely available to all indigent patients. This may, to some extent, be true, but I also subscribe to the philosophy that those who can afford to pay for a service should do so.

I think it would be found that any cytology program which was established on an ethical basis in Arkansas could satisfactorily provide cytology diagnostic facilities for all of our indigent patients, and to those who could afford to pay for the service, at a fee which was reasonable.

What progress is being made on a National level to overcome some of the problems mentioned, and what can be done locally? Personnel to adequately man cytology laboratories will increase in the future. There are at the present time approximately 2,700 pathologists listed on the roster of the College of American Pathologists as compared to approximately 2,100 in 1956. All of the newer graduates in pathology are receiving cytology training as part of their residency program, and are examined in the field of cytological diagnosis in their American Board examinations.

The Registry of Medical Technologists has established a certification classification for cytotechnologists. Schools of cytotechnology have been established in many of the larger teaching centers, and over the years there will be an increase in the amount of teaching material available and more approved schools.

To assist in the recruitment of cytotechnologists the American Cancer Society, in conjunction with the American Society of Clinical Pathologists, has recently released an excellent film entitled *The Human Cell and Cytotechnology*. The film is designed for showing to high school and college level audiences, to encourage their interest in this field. The American Cancer Society is also conducting intensive educational programs, both for the public and the medical profession, in the field of cytology.

What should we do in Arkansas at the present time to establish an effective cytology program? An educational program for the physicians of the state should be instituted. This will not only emphasize the advantages of cytological diagnosis, but will provide essential infor-

mation for the collection and transmission of material to the cytology laboratory. They should also be informed as to where these services may be obtained. I feel that we already possess the nucleus for a program which is only waiting to be utilized. I am sure that those of us who are doing cytology could more than double our volume without any increase in personnel. As the demand became greater it would be expedient for us to provide trained cytotechnologists for our laboratories and thus increase the service available to the people of the state. As the volume of work increases the cost to the patient will proportionately decrease. I should like to point out, and I

believe that I speak with some authority, that none of the pathologists who are doing cytology in Arkansas would ever refuse to accept material on indigent patients. All that is required is that the referring physician indicate to us that there is to be no fee charged, and we shall respect their wishes. Until the existing facilities within the state are utilized to their fullest extent, which they are not at the present time, I cannot see any justification for the establishment of a central cytology laboratory subsidized wholly or in part by public funds. There is no place for government intervention in the physician-patient relationship or the practice of laboratory medicine.



# The Physician's Role in the Social Security Disability Program

*U.S. Department of Health, Education and Welfare*

Doctors, hospitals, institutions, and agencies who have contact with disabled people are frequently asked these days to fill out medical reports in connection with claims under the disability provisions of the social security law. The provisions protect severely disabled people in three ways:

1. Benefits are provided for insured workers age 50-65 who are no longer able to work because of an extended total disability. Beginning September 1958, benefits may also be paid to certain of the disabled workers' dependents — namely, wives and dependent husbands who have reached retirement age, unmarried dependent children (including sons or daughters disabled in childhood), and wives, regardless of age, who have in their care children entitled to benefits.

2. Benefits can be paid to adult disabled sons and daughters of retired workers and of workers who have died. To be eligible for these benefits, the disabled son or daughter must have a disability which began before age 18 and has continued uninterruptedly.

3. Disabled workers, regardless of age, can "freeze" their social security records to protect their own and their families' future benefit rights.

To qualify under these disability provisions, a person must be unable to engage in any substantial gainful activity by reason of a medically determinable physical or mental impairment which can be expected to result in death or to be of long-continued and indefinite duration. A disabled worker must, in addition, have social security credits for work in at least 5 out of the 10 years before he became disabled and must be fully insured. The social security credits needed for a fully insured status vary from person to person depending on age. Five years of work under social security will be enough to meet the "fully insured" requirement through 1960. Anyone with 10 years of

social security credits is fully insured for life.

Benefits are not payable for the first six months that a person is disabled. However, as in the case of the old-age insurance benefits, the law protects a person who delays filing his application for sometime after he meets the requirements for payment (including the six-month waiting period), in that it permits back payments for as much as 12 months.

Workers with long-standing disabilities have until June 30, 1961 to apply to have their social security records frozen as of the time they actually became disabled. In some cases this may be as far back as October 1941, the first date when the work requirements could have been met.

Under the social security law the benefits payable to a child ordinarily stop at age 18. Where a disabled child was entitled to benefits before age 18, his benefits will be continued so long as he is disabled. Otherwise, his benefits begin when the parent on whom he is dependent becomes entitled to disability benefits (age 50-65) or to old-age insurance benefits, or dies, regardless of the child's age at that time. In contrast to the applicant for disability insurance benefits or for a "freeze," the disabled child does not need a record of work under social security. The disabled child must, however, meet the same definition of disability as disabled workers. The mother of the person receiving this type of benefit may qualify for mother's benefits if she has the disabled son or daughter in her care.

All applicants, whether for benefits or for the freeze, are referred to their State vocational rehabilitation services. Payments to the disabled worker and his eligible dependents are suspended, if the disabled worker refuses, without good cause, to accept available rehabilitation services. On the other hand, if the disabled worker accepts the rehabilitation services and performs work pursuant to an approved State vocational rehabilitation program,

benefits may continue for as much as 12 months after he starts that work.

Applicants under the social security disability provisions are taken by the 584 social security district offices, located in communities all over the nation. The social security district office gives the disabled applicant information about his rights, helps him to fill out his application, and advises as to the proofs and documents he may need to support that application. Under the law, the disabled person is responsible for furnishing, at his own expense, the evidence to show that he is "disabled" within the meaning of the social security law.

His social security district office gives him one or more copies of a medical report form on which this evidence can be supplied. He is asked to take or mail this form to his attending physician or to a hospital, institution, public or private agency where he has been treated for his disabling condition. This report form, designed as a guide for the reporting physician, lists the kind of medical facts essential for the determination of "disability." However, the reporting doctor is not required to use it; if he prefers, he may make his report in the form of a narrative summary or he may submit photocopies of the pertinent medical records. The completed reports are to be returned by mail to the social security district office (or to a State agency, if indicated).

By providing a full and objective clinical picture of his patient, the reporting doctor fulfills his responsibility to his patient, and incidentally, expedites the decision. To be of maximum use for the evaluation of a patient's capacity for work, the report should include a history of the impairment, the symptomatology, clinical findings and diagnosis. It should be noted that the attending physician is asked only to provide this type of objective medical data. He is not put in the position of having to decide the issue of "disability." The determination as to whether a patient is "disabled" must be made within the scope of the social security law; often it is based on evidence from more than one medical source. Also the determination must take into account factors which are not purely medical — fac-

tors such as education, training, and work experience.

After the applicant has filed his claim under the disability provisions, and furnished the supporting evidence, his case is forwarded by his social security district office to an agency of his State—usually the State vocational rehabilitation agency. Under agreements between the individual States and the Federal Government, these State agencies make the disability determinations for their own residents.

In the State of Arkansas, the agreement with the Federal Government provides for the Vocational Rehabilitation Services to make these disability determinations.

The evaluation of disability is made by a "review team" in the State agency. There are at least two professional people on each team. One of the two is a doctor of medicine (often a practicing physician who serves with the State agency on a part-time basis); the other is trained in evaluating the personal and vocational aspects of disability. The team must decide whether the applicant is sufficiently disabled to prevent him from engaging in any substantial gainful activity within the foreseeable future.

In many cases it is necessary to write back to the reporting physician because the medical report does not contain enough clinical facts. As a rule, the kinds of medical facts that the attending physician needs in making his diagnosis and in treating his patient are the same as those required to evaluate the severity of impairments in disability programs. However, certain medical facts are more highly significant in disability evaluation than to medical management of the case. To evaluate the effect of the impairment on the individual's ability to work requires the kind of medical evidence that confirms the diagnosis and measures remaining functional capacities of mind and body. By furnishing complete and objective evidence, the reporting physician makes it unnecessary for the reviewing physician to "write back" for additional clinical or laboratory data.

Where the medical evidence initially submitted indicates a reasonable likeli-



hood that the applicant is disabled, but more precise clinical or laboratory findings are needed to arrive at a sound decision, or to resolve conflicts in the evidence, a consultative examination (usually at the specialist level) may be ordered to obtain additional information. Selection of consulting physicians and payment of fees are governed by State practices.

Some doctors feel that they should be reimbursed by the Government for the cost of preparing the medical reports on their patients, and it is, of course, quite within their prerogative to charge the patient a fee for that service. However, under the law, the Social Security Administration cannot pay that fee; that is the individual's responsibility.

Other doctors are perturbed when asked to complete medical reports for individuals whom they may not have seen for years. In these cases, however, the physician is not expected to describe the present condition of the patient, but his medical condition as of the time he made his last examination.

#### EVALUATION OF DISABILITY

The central purpose of disability evaluation is to determine remaining mental and physical capacities. To determine: (1) what the claimant has left, and (2) what he can do with what he has left.

A realistic evaluation of disability must be based on clinical and laboratory tests of the individual's ability to meet the metabolic demands of activity, to reason, to perceive, and to perform certain basic activities such as sitting, standing, bending and walking. When incapacity results from severe impairment of one or more such functions, it is essential to establish not only the fact that functional impairment exists, but also its extent.

A brief discussion of disability from heart disease may serve to illustrate the kind of evidence needed to measure the patient's remaining functional capacity, after appropriate therapy. Most frequently, impairments of circulatory system produce loss of bodily function by reduction of cardiac reserve, or interference with peripheral vascular circulation. As a result the circulatory apparatus cannot

meet effectively the metabolic demands placed upon it. The diagnosis of the condition usually reflects whether the impairment is caused by valvular disease, myocardial damage or vascular pathology.

Cardiac size by X-ray or physical and EKG findings furnish objective proof of cardiac pathology. The amount of dyspnea or angina described in terms of the number of steps that can be mounted or distance in feet or blocks that the patient can walk is highly significant to evaluation of the degree of loss of function. The presence or absence of cardiac edema and response to therapy are also indicative of severity of cardiovascular impairments. The status of the pulse in the peripheral vessels may provide gross clinical evidence of impaired circulation of the extremities.

Impairments of the cardiovascular system may manifest themselves with dramatic suddenness, e. g., myocardial infarction, obstruction of vessels in peripheral or central nervous system circulation, lungs, and other visceral organs. The initial clinical manifestations are severe and the prognosis dubious. With survival from the acute stage, and appropriate therapy, substantial improvement can be expected over a period of time. A realistic evaluation of remaining function should be made after the convalescent period. Hence, the clinical and laboratory findings after maximum improvement from treatment are particularly valuable in making a determination of remaining cardiac, brain or other function. (Note that a "waiting period," is prescribed by law, i. e., the first monthly disability insurance benefit cannot be paid until the seventh month after the onset of the disability.) A description of the acute attack helps confirm the diagnosis and should, therefore, be included in the report.

Loss of function is evaluated on the basis of clinical and laboratory findings after maximum benefit from treatment. Clinical information concerning nature and response to treatment furnishes information on stability of functional capacity, i. e., a history of periodic decompensated heart disease, in spite of treatment, would indicate a comparatively severe condition.

More complicated tests of vascular function may be required in certain cases, e. g., arteriography. The reporting physician should not be concerned because he may not have equipment to perform these tests. A carefully performed exercise tolerance test (if not medically contraindicated) will almost always provide the clinical evidence needed to evaluate the degree of remaining function.

#### CONCLUSION

In developing evaluation guides for the use of State agencies and its own technical and professional personnel, the Social Security Administration has had the continuing cooperation of a Medical Advisory

Committee composed of recognized specialists associated with medical and allied professions in various fields outside Government, such as general practice, research, medical education, industry and labor.

The American Medical Association has taken steps to inform its members about the medical aspects of the disability program, especially the preparation of medical reports. On June 1, 1957, the Journal of the American Medical Association carried a comprehensive report on the administration and organization of the disability provisions. Regulations on the meaning of disability appeared in the September 28, 1957 issue.



# ♦ *What's* NEW ♦

## Fistulotomy Versus Fistulectomy

MARION S. CRAIG, JR., M.D.\*

An anal fistula is a tract or tube, inflammatory in origin, having its primary opening (i.e. point of origin) at some site in the wall of the anal canal (usually in an anal crypt) and its secondary opening (i.e. point of termination) in the anal, perianal or perineal skin, at the vaginal orifice or internally in the wall of the rectum. The commonly used descriptive terms "internal" and "external", as applied to the openings of an anal fistula, cannot be applied to all types of anal fistula because some fistulas have no external openings. For example, in the anorectal type of fistula, the point of origin is in the anal canal and the point of termination is in the wall of the rectum internally without any "external" evidence of a fistula. Therefore the adjectives "primary" and "secondary", as applied to the openings of an anal fistula, are self-explanatory, and they fit perfectly into the story of the pathogenesis of an anal fistula.

The pathogenesis of the vast majority of anal fistulas consists of four stages. The first stage is the development of infection in an anal crypt. These crypts are tiny structures located at the level of the dentate line. The second stage is represented by the extension of the inflammatory process from the anal crypt with invasion of a portion of the para-anal, and, at times, the para-rectal tissue. The third stage is represented by the localization of the inflammatory process with resultant abscess formation. This localization with abscess formation may take place externally in the para-anal tissue, or internally in the pararectal tissue. The abscess may be acute or chronic in nature depending upon the virulence of the invading organisms and resistance of the tissues

of the host. The fourth and final stage in the development of the fistula takes place when the abscess ruptures spontaneously or is drained surgically. With completion of this fourth or terminal stage, there exists a direct communication from the point of origin of the fistula in the anal crypt to the site where the abscess is draining. When such an abscess is discovered, it should be drained surgically and not be allowed to rupture spontaneously. In most cases the surgical correction of the fistula can be performed at this same time.

The treatment of anal fistula is surgical. The method of "fistulotomy" is now the procedure of choice rather than "fistulectomy". However, some present day authors often use the term "fistulectomy" when in reality, they mean "fistulotomy".

By fistulectomy is meant the excision or removal of the entire fistula. Fistulotomy pertains to the laying open of a fistula throughout its entire extent by means of incision of the overlying tissues. The overhanging margins of the wound are then excised, including the superficial half of the lining of the fistulous tract. The deep half of the lining of the tract remains.

The preference for fistulotomy is based upon the following considerations which have been so clearly set-forth by Nesselrod (1):

"1. Fistulotomy follows logically upon the conception of the pathogenesis of anal fistula. The same can be said of fistulectomy, but:

2. Fistulotomy is a much less extensive surgical procedure than is fistulectomy, and yet is adequate. In the performance of fistulotomy the tissues deep to the fistulous tract are not disturbed.

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## FISTULOTOMY VERSUS FISTULECTOMY

3. Fistulotomy allows conservation of tissue which is useful in the healing process. The lining of the remaining deep half of the fistulous tract is fibrous tissue and it quickly acquires a covering of granulation tissue. Scarring following this procedure is much less than that following fistulectomy.

4. Fistulotomy necessitates the sectioning of only those fibers of the sphincteric musculature which are superficial to the fistulous tract. The muscle fibers lying adjacent to the deep half of the tract are attached to the fibrous wall of this remaining portion of the tract and are, therefore, held in place. In the more extensive procedure of fistulectomy, all muscle fibers superficial to the fistula as well as all fibers attached to the walls of the fistula are sectioned, resulting in a much greater defect in the sphincteric musculature. The 'splinting effect' of the deep half of the tract following fistulotomy is a point of considerable importance."

The principles involved in the surgical treatment of an anal fistula, as set-forth by Buie (2) many years ago, are still applicable in the present day management of anal fistulas. They are as follows: "1.

The primary opening (point of origin of the fistula) must be found. 2. The fistulous tract or tracts must be traced. 3. Structures external to the primary opening and the fistulous tracts must be cut away so that the fistulous tunnels are converted into open ditches throughout their entire course. 4. Measures must be adopted during and following the operation to insure that the cavity will heal from within outward, without development of further tracts."

Just as in the surgical treatment of hemorrhoids and of anal fissure, so also in the surgical management of anal fistula, the establishment of adequate surgical drainage at the anus and perianal area is essential. This is accomplished by means of judicious excision of all overhanging skin margins and by sectioning all bands of tissue which are found to lie at a right angle to the longitudinal axis of any wound. These provisions together with proper after care are in observance of Buie's fourth principle.

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**A TEACHING SEMINAR**  
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## The Importance of the Toxin Theory in Small Bowel Obstruction

JEROME J. LANDY, M.D., PH.D.\*

The mechanism of death following strangulated intestinal obstruction has not been completely elucidated. Many theories have been proposed in an attempt to explain this mechanism. Newer physiological studies have shown the importance of fluid and electrolyte loss, overdistention, and pooling of blood in strangulated segments of small bowel. However, many investigators have tended to incriminate bacteria, especially *Clostridium welchii* and its exotoxins, as a vital etiologic agent when strangulated intestinal obstruction results in death. The purpose of this paper is to discuss the toxin theory and suggest several new approaches to evaluating its importance.

### IMPORTANCE OF INTESTINAL OBSTRUCTION

The death rate from intestinal obstruction decreased rapidly following application of basic principles learned during physiological experimentation. These include proper replacement of blood, plasma, saline and potassium, the judicious use of gastric and intestinal tubes and, in particular, properly timed surgical correction of mechanical obstruction.

The incidence of death from intestinal obstruction was 6 per 100,000 in 1937 (1). This decreased to 3.3, 3.1 and 3.0 per 100,000 in 1950, 1951 and 1952 respectively (2). The latest available *Vital Statistics of the United States* lists the mortality for intestinal obstruction as 2.9 per 100,000 population for 1954, 1955 and 1956 (3). In 1956 there were 4,877 deaths reported from intestinal obstruction. All the above statistics are for intestinal obstruction exclusive of hernia. If the mortality figures for hernia of the abdominal cavity with obstruction are included, several

thousand additional deaths per year must be added.

The above data indicates that the mortality rate for intestinal obstruction, after a marked improvement, has reached a plateau. There would seem to be two paths that could be followed to decrease the mortality rate for this condition. The first would call for additional dissemination of knowledge regarding the prevention of and the early definitive therapy of this condition. This would include measures such as gentle handling of tissues, washing powder off of gloves, education of the public to report symptoms early, etc. The second approach would be concerned with basic research in the mechanism of death from intestinal obstruction.

Many papers have been written on the anatomic, physiologic, pathologic and bacterial derangements in intestinal obstruction, especially when strangulation is present. However, the cause of death has not been satisfactorily explained. Although the mortality of intestinal obstruction has been quite favorably influenced by modern therapy resulting from previous research, additional improvement may well depend on future research.

### EFFECT OF DISTENTION AND BLOOD LOSS

Even though the importance of toxins in intestinal obstruction has not been evaluated completely, the effects of overdistention and blood loss have been well worked out. Small prolonged increases of the intraluminal pressure have a definite adverse effect in small bowel obstruction. Constantly sustained elevated intraluminal pressures were observed in the ileum of dogs by Sperling and Wangenstein (4). By raising this pressure above ten centimeters of saline findings were noted which progressed from petechial hemorrhage of the bowel to increased permea-

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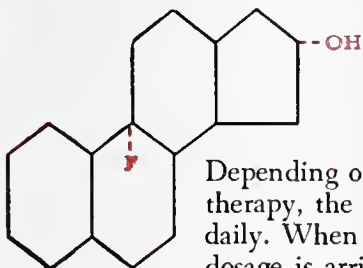


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Depending on the acuteness and severity of the disease under therapy, the initial dosage of ARISTOCORT is usually from 8 to 20 mg. daily. When acute manifestations have subsided, maintenance dosage is arrived at gradually, usually by reducing the total daily dosage 2 mg. every 3 days until the smallest dosage has been reached which will suppress symptoms.

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bility of the bowel wall with impaired viability, and terminated in necrosis of the bowel and death of the animals.

Distention results from accumulation of fluids and gas. Approximately 8,000 cubic centimeters of fluid (1500 cc. saliva, 2500 cc. gastric juice, 500 cc. bile, 700 cc. pancreatic juice and 3,000 cc. small intestinal juice) are secreted into the gastrointestinal tract in a twenty-four hour period. In addition, the obstructive process itself is a stimulant to increased secretion of fluids into the intestinal tract.

Gaseous distention of the small intestine is perhaps as important as the accumulation of fluids. These gases can come from several sources: 1) swallowed air, 2) gases transported from the blood stream by diffusion, 3) gases produced by bacterial decomposition of cellulose and other materials in the intestine. It is well known that putriferous bacteria produce large amounts of gas. Antibiotics decrease to some extent the gas production by these bacteria. Since these bacteria are present in the intestinal contents, the addition of strangulation to obstruction can cause large amounts of gas to be produced.

Swallowed air is quite important. Hibbard (5) found that seventy-two percent of intestinal gas comes from swallowed air. This fact demonstrates the value of the gastric tube in the early treatment of intestinal obstruction, although usually the small intestinal tube is preferred to remove the gas and fluids already present in the small intestine. There are times where the use of the small intestinal tube is not practical and nasogastric suction, when effectively used, will largely prevent the additional distention from swallowed air. Thus, the gastrointestinal tubes, particularly the long intestinal tubes, can be used as adjuncts to surgery. Little more improvement can be expected along this line. It is obvious that closed loop strangulated obstruction cannot be treated only by this measure.

As in some of the early experiments on trauma, the significance of blood loss in strangulated obstructions was not completely realized. Scott and Wangenstein (6) conducted a definitive experi-

ment along this line in 1932. Ligation of the venous drainage to a segment of small bowel in dogs produced the most profound results. The wall of the involved intestine was markedly thickened, large amounts of blood were pooled in the lumen of the bowel and considerable amounts of bloody fluid were present in the peritoneal cavity. These animals went into shock early, had a profound decrease in their blood volume and died in several hours. In other dogs where either the arteries or both the arteries and veins to the involved segment were ligated, the findings were less dramatic. The accumulation of blood in the bowel was much slower, the animals lived longer and they frequently died from perforations of the bowel with contamination of the peritoneal cavity rather than from hemorrhagic shock. The importance of early and adequate blood replacement as well as early operative intervention is thus clearly emphasized.

Perhaps one of the earliest lessons learned in the etiology and management of small bowel obstruction occurred in experiments on high intestinal obstruction. Hartwell and Hoquet (7) administered subcutaneous saline to dogs with high intestinal obstruction and prolonged their survival considerably. This regime, of course, is not effective in low ileal obstruction. In high obstruction vomiting with its concomitant loss of electrolytes, in particular chloride, leads to an early and severe electrolyte imbalance with a rapidly fatal alkalosis. Modern therapy is related to correction of dehydration and electrolyte loss and restoration of a normal bicarbonate content and pH to the blood. Gastrointestinal juices also contain moderate amounts of potassium (8). Proper preoperative care demands that adequate amounts of fluid, saline and potassium, as well as blood, be given. It may take many hours to administer sufficient fluids to a patient with long standing, severe upper intestinal obstruction. However, the proper preoperative correction of dehydration, electrolyte imbalance and blood loss has contributed remarkably to the reduction of mortality in intestinal obstruction. Along with the judicious use of gastrointestinal tubes and



the proper timing of surgery, this has been the main advance in the treatment of intestinal obstruction. As stated above, further progress in reducing the over-all mortality of intestinal obstruction will be somewhat dependent on the dissemination of these concepts in areas where they are not fully appreciated, but more so on new basic findings concerning the cause of death in intestinal obstruction.

#### IMPORTANCE OF TOXINS

Many articles have been written on the cause of death in strangulated intestinal obstruction. Much of the earlier work tended to incriminate bacteria, especially *Clostridium welchii* and its exotoxins. Williams' article (9) was one of the first of these. Many studies have indicated that the toxic material which accumulates in the peritoneal cavity in strangulated intestinal obstruction is of bacterial origin. Attempts to work with bacteria-free tissues have been largely invalid. Schweinburg and Sylvester (10) have shown that the viscera of normal healthy laboratory animals are contaminated with bacteria in the majority of cases.

More recently the toxin theory of death in intestinal obstruction has been reevaluated. Nemir, Hawthorne, Cohn and Drabkin (11) have correlated death of animals with the appearance of black peritoneal fluid during the preterminal stages of strangulated intestinal obstruction. They found an abnormal hemin pigment, which was not the lethal factor although it was associated with the toxicity of the peritoneal fluid. Tanturi, Anderson and Canepa (12) found that lecithinase, the alpha toxin of *Clostridium welchii*, and hyaluronidase were present in the fluid exudate from lethal strangulated intestinal obstructions. Harper and Blain (13) did some of the original work on the role of antibiotics in relationship to this problem. They were able to protect the obstructed animal with antibiotics. This was one of the first of many studies showing the beneficial action of different antibiotics, singly and in combination, as well as the poorly absorbed sulfonamides in the protection of animals with intestinal obstruction. However, these drugs have not been able to eliminate completely the bacterial factor and, although they have improved

the survival rates greatly, they have not settled the basic problem. Therefore, it appears that an impasse has been reached with this line of experimentation which can only be solved by utilizing germfree animals. It is not practical to discuss all the basic research relative to intestinal obstruction. Those interested are referred to the excellent collective review of strangulated intestinal obstruction by Cohn (14) and the third edition of *Intestinal Obstruction* by Wangenstein (15).

#### FUTURE EXPERIMENTATION

Several new approaches might be explored to evaluate the toxin theory of intestinal obstruction. Methodology and basic knowledge in biochemistry, pharmacology and the utilization of germfree animals have progressed and can be applied to this problem. Three such experimental designs are presented.

There has been considerable recent interest in ammonium metabolism, particularly in hepatic coma, and to a lesser extent in hemorrhagic shock. Hibbard and Kremen (16) found a volatile base in the intestinal contents of obstructed dogs. Nelson and Seligson (17) found a higher concentration of ammonia in blood in the portal vein, and also a higher concentration in the peripheral circulation of animals in hemorrhagic shock. There is some evidence for liver damage in intestinal obstruction. It would be interesting to explore the possibility that hepatic failure coupled with increased ammonia production might explain some of the deaths in strangulated intestinal obstruction.

Studies on peritoneal exudates from strangulated intestinal obstructions have been limited largely to physiological observations and to spectrophotometric determinations. It is planned not only to repeat many of these studies, but to enlarge the methodology. The exudate obtained from intestinal obstruction could be studied by electrophoretic methods. Specimens can be concentrated by dialysis or cryodesiccation, if necessary. Peritoneal fluid can be fractionated in a continuous flow preparatory apparatus and each fraction tested for toxicity by injection into other animals. If a fraction is found to be toxic, it can be characterized electrophoretically by various

staining procedures and analyzed chemically for enzyme activity.

In certain areas basic surgical research has reached an impasse. This is largely due to the fact that most of this research has been performed on laboratory animals. Uncontrolled bacterial contamination of these animals has invalidated many of the crucial experiments related to intestinal obstruction, pancreatitis, peritonitis, hemorrhagic shock, ammonia metabolism, etc. The various species of *Clostridia*, which are widely distributed in the viscera of the normal dog and other laboratory animals, are one source of possible contamination. Germfree animals could be used to eliminate or control bacteria and therefore the toxin factor. The classic experiments on animals relating to intestinal obstruction could then be repeated under controlled conditions. In the many articles published on the cause of death from intestinal obstruction, one question is always unanswered: the importance of bacteria, and especially their products, in contributing to the fatal outcome. It is believed that the only way to settle this issue definitely is to repeat these basic experiments with germfree animals.

#### SUMMARY

Great strides have been made in the second quarter of this century in the treatment of intestinal obstruction. This was followed by a gratifying reduction in mortality. This trend reflected favorably on the basic research which had previously been done. Intestinal obstruction as a cause of death in this country has leveled off at about three per 100,000. Further improvement will have to come primarily from newer knowledge concerning the mechanism of death, particularly in strangulated small intestinal obstruction. Several possible approaches to the problem has been presented.

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# What Is Your Diagnosis?



FOR ANSWER SEE PAGE 263

# Arkansas Public Health at a Glance

## LOCAL PARTICIPANTS AT PETIT JEAN WORKSHOP BY COUNTY 1948-58



On July 11, 1948, the first Petit Jean School Health Education Workshop convened at Mather Lodge. There have now been eleven of these two week workshops held annually. During these eleven years there have been 1,091 participants from local schools and health units, 8 visitors from foreign countries, 274 participants from the staffs of state agencies working in school health, and 54 people from other states.

The 1,091 participants from local schools and health units have been well distributed throughout the various sections of Arkansas. Every one of the 75 counties has had at least one person at the workshop, and the average has been 14.5 participants per county.

The purpose of the Petit Jean Health Education Workshop has always re-

mained the same, to improve the health programs in Arkansas schools. The methods have varied, but this basic aim has remained constant. This consistency of purpose was culminated in the 1958 workshop when the *Handbook for Health Education in Arkansas Schools* was produced. This guide, designed primarily for the classroom teacher, is intended as a complete guide for a total school health program. The thoughts and efforts of 1,427 people over an eleven year period are incorporated in this publication. It was prepared by Arkansas people for use in Arkansas schools.

The *Handbook for Health Education in Arkansas Schools* is a joint publication of the Arkansas State Board of Health and the Arkansas State Department of Education. Distribution will be from these two agencies.

\*Sponsored by the Arkansas State Board of Health



# Editorial

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## Keep the Standards High

FOUNT RICHARDSON, M.D.\*

Arkansas doctors have taken justifiable pride in the high type of medical practice that has been the goal of our medical society and of our medical school for many years past. It comes as a shock when we realize that these ideals are being challenged; this challenge to the lists being flung by the graduates of schools of Osteopathy who are asking the lawmakers of Arkansas to lower these standards and admit them to the practice of medicine and surgery in the hospitals of our state. The conflict will be in the halls of the legislature and the charges and counter-charges will not make the task of decision easy.

But the matter is not too complex. It is true that the schools which still teach osteopathy are adding other courses to their curriculum. It is true that they have made some improvements. A brochure has been sent out by their association to every legislator that the osteopath will, if allowed to practice in all the fields of medicine and surgery, go out into the smaller villages and rural districts and thus bring more wide spread medicine to our state. This, if true, might sway many a legislator.

Simply put, we doubt this offer. It is a blind from which to shoot for entrance into our medical institution whose doors are opened only to those who have passed crucial tests and whose training and professional equipment are of the highest order.

Permission to practice the healing art is rightly subjected to severe and sound restriction. This is as it should be.

These restrictions have but one purpose: the protection of the health of our

people. To that high purpose the physicians of Arkansas must rally and stand. We can allow no lesser goal. There is no greater one.

When, and if, the schools of Osteopathy are brought up to the standards of the medical schools in the United States and when and if the discredited cult of osteopathy is abandoned and when and if these schools are willing to submit their graduates to the same rigorous training and courses of instruction and examinations as other schools who train those to whom we trust our lives, then and only then should they be allowed to practice as equals in Arkansas.

The schools of Osteopathy simply have not come up to the minimum standards of accredited medical schools. They cannot and should not be accepted as equals of those who have fulfilled the higher requirements.

This is not a matter of persons or personalities. The matter we are concerned with is the protection of the health of the people of Arkansas by insisting that health workers have reasonable and proper training. The way to do this is to insist on high standards for these workers. Physicians are directors of the personal health of the people, and they must pass critical tests; they must never be allowed to practice by governmental fiat. As we learn more and more of medicine, the restrictions and requirements should be made even higher. This means better health for Arkansas.

We are trying to state a principle. The battle will be fought in the legislature. A clear understanding of the principles will make the task of decision easier for our law-makers. They will weigh the evidence and make the proper decision. They hold the health of the people of Arkansas in their hands.

We have one request—"Keep our standards high."

\* 316 W. Dickson, Fayetteville, Arkansas

## Medicine in the News

### Memorial for Dr. Hooper

A check for \$700 was recently presented to the St. Bernard's Hospital of Jonesboro to pay for two pieces of heart resuscitation equipment. The money was provided by an anonymous donor with instructions that it should be used to provide a memorial to Dr. Rector C. Hooper who died several months ago of a heart seizure while performing an operation.

### Aid to Education Programs Will Be Under Way in Short Time

The Department of Health, Education, and Welfare and its Office of Education are hurrying the establishment of a number of programs for aid to education and expect to have some of them in operation by the end of the year. All will be under way before start of the 1959-60 school year. The objectives are to improve teaching facilities and standards for science, mathematics and foreign languages, to identify more promising students in these fields at an early age, and to keep the students in school and on the proper courses. While medicine is not singled out for special treatment, pre-med and medical students generally are eligible for loans. Also strengthening of primary and secondary school science courses and improvement in pupil guidance should identify more prospective medical students.

### Legion Favors Minimum of 125,000 Beds for VA Hospitals

The American Legion wants Congress next session to authorize a minimum of 125,000 beds in the Veterans Administration hospital system. This already has been proposed in a bill introduced late in the last session by Chairman Olin Teague of the House Veterans Affairs Committee. The bill also would write into law the 10-P-10 form which veterans who claim they are unable to pay for care must sign. On this latter issue, the legion took no stand at its recent national convention. The legion also was critical of Budget Bureau control over VA

medical care spending plans and advocated that a 10-year-old bureau directive which established administrative control over the VA Department of Medicine and Surgery be modified.

### PHS Reports Radioactivity in Milk Continues Within Limits

Public Health Service reports that its latest tests for the presence of radioactivity in milk from nine locations in the U.S. have shown amounts well within the permissible levels recommended by the National Committee on Radiation Protection and Measurement. The reports cover the May-June period and brings up to date findings started by PHS in the spring of 1957.

### President Criticizes Union Welfare Fund Act as Inadequate

President Eisenhower has signed into law a bill providing a limited amount of publicity for union-management welfare funds (medical plans included), but at the same time he criticized the legislation as too weak and said it would be ineffective unless tightened up by the next Congress. Under the law the funds are required to register with the Secretary of Labor and make annual reports, which will be filed with the secretary and made available to any beneficiaries. In a statement Mr. Eisenhower declared:

1. The act requires only summary statements of many important aspects, "making it possible to conceal many abuses."
2. No agency of government is authorized to provide uniform interpretation of the bill's technical terms, and "the chaos that will result is obvious." Failure to designate an agency plan administrators can consult for reliable and authentic opinions, and for report forms, "enables corrupt administrators to hide abuses, blocks beneficiaries from receiving adequate information, and subjects administrators to uncertainties in compliance."
3. The bill's reliance solely upon individual employees to compel compliance through court proceeding is most unrealistic. "Employee suits alone are inadequate as enforcements remedies. Unaided by governmental authority to conduct investigations and institute litigation, in-



dividual employees, without financial resources or legal experience, can be easily intimidated, made subject to reprisals and discouraged from taking effective action."

4. The bill fails to give the Secretary of Labor either investigatory or enforcement powers with respect to reports filed with him.

5. There is no provision for dealing directly with "the most flagrant abuses," such as embezzlement and kickbacks, once they are uncovered.

In conclusion the President said: "Not only did the Congress fail to appropriate any money to administer the custodial and other functions of the secretary under the bill, but the annual financial reports will not have to be furnished until as late as May, if the plans are on a calendar year basis or for a period of 120 days after the completion of the fiscal year if they operate on a fiscal year basis."

### **Medicare Shutdown Early in 1959 Seen as Possibility**

Medicare officials, after another look at the account books, see the possibility of a shutdown of the civilian phase of the program early in 1959. The reason is relatively simple: the \$72 million appropriated by Congress for the fiscal year will not be adequate. And Senate and House conferees agreed that the armed forces should not spend more than that amount. Maj. Gen. Paul I. Robinson, who retired this week as head of the Office for Dependents Medical Care, says one solution lies in Congress changing its mind and voting more funds after it convenes January 7. Another possibility is for the Defense Department to use other funds to make up its deficit, then explain to Congress next session why its instructions could not be followed.

### **IMMUNIZATIONS FOR TRAVEL**

A new edition of the booklet "Immunization Information for International Travel" was issued this week by the Public Health Service, Department of Health, Education, and Welfare.

The booklet is designed primarily for use of travelers going abroad and for health departments and physicians. It gives current details on immunization requirements for persons entering the Uni-

ted States, including Americans returning from abroad. It also lists requirements and recommendations for immunization in 200 other countries, and in some cases, additional recommendations of the Public Health Service for American travelers.

Information on bringing pets into the United States from other countries is included in a special section.

Prepared by the Division of Foreign Quarantine of the Public Health Service, the booklet is for sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for 30 cents.

### **Wyeth Offers Second Program of Pediatric Fellowship Grants**

PHILADELPHIA, Sept. 15 — Grants providing for postgraduate pediatric studies will be awarded again in 1959 by Wyeth Laboratories, it has been announced by Dr. Philip S. Barba, past president of the American Academy of Pediatrics and chairman of the fellowship selection committee.

The Philadelphia pharmaceutical manufacturing firm will award 20 two-year grants, each carrying an annual stipend of \$2,400.

Application for the Wyeth pediatric fellowships must be submitted by November 28 to a committee member. The grants will be effective on July 1, 1959. Information and application forms may be obtained from Dr. Barba at the University of Pennsylvania School of Medicine, Philadelphia, Pa.

### **Mine Worker Fund Claims Savings In Medical, Hospital Costs**

United Mine Workers Welfare and Retirement Fund's annual report claims a 2.4% or \$1,448,909 savings over the previous year in total cost for hospital and medical care, "notwithstanding the sharp increase in such costs throughout the nation." The report for the fiscal year ending last June 30 frankly states that the savings are due to the elimination of the free-choice-of-physician arrangement and such other procedures as cutting down on stay in hospitals. The report comments:

"The trust fund's official files and records . . . are replete with evidence showing that the primary quality and cost re-

quirements of trust fund regulations were not being met under the previous free-choice-of-physician arrangements whereby the fund had permitted the beneficiary free choice of physician and had paid every physician so chosen for any service he billed the fund, and had allowed him to hospitalize any beneficiary at fund expense whenever and for as long as he desired."

Other report highlights: (1) About 1 million miners and their dependents are covered by the hospital and medical services provided by the fund, and during the past year 85,426 beneficiaries received hospital and medical care benefits, and (2) the fund paid out \$58,135,684 for hospital and medical care which involved 1,458,385 days of hospitalization, 1,311,088 hospital visits by physicians and 969,801 office and outpatient clinic consultations.

### **Social Security Payments Still Running Ahead of Receipts**

The Budget Bureau, in its annual mid-year review of the federal budget, revives upward from last January the OASI and disability payments being made. OASI receipts for the last year are now estimated at \$8.35 billion compared with payments of \$9.49 billion. One reason for the rise is a payment of over \$300 million to the railroad retirement account to help equalize the actuarial risk of the two systems. Disability payments, on the other hand, continue below receipts — \$418 million compared with \$957 million estimated to be taken in this year.

### **HEW Considers Expansion in Medical Education, Research**

Secretary Flemming of the Department of Health, Education, and Welfare is giving serious consideration to the Bayne-Jones report which proposes a widescale expansion in medical education and research efforts. Asked at his first news conference about the report made public last July, Mr. Flemming said: "I want to assure you it will not be put on the shelf to gather dust."

Later, he said that he and his staff were going over the recommendations, with the idea that some might be accepted and some modified. He expects that by Oc-

tober 15 HEW will have given the Budget Bureau preliminary estimates of the cost of carrying out some of the Bayne-Jones programs. Then the final estimates would be included in the HEW budget which is due to be completed in December.

### **Model Law on Nursing Homes for States Being Drafted by PHS**

The Public Health Service is working on model legislation and regulations for nursing homes and homes for the aged, which will serve as a guide to States and Territories interested in revising their statutes and rules. The project was requested by the Association of State and Territorial Health Officers and the National Conference on Nursing Homes for Aged. Various groups are being invited to review and comment on the drafts.

### **AMA Plans Civil Defense Conference in November**

More than 175 physicians and others interested in civil defense gathered November 8-9 in Chicago for the ninth annual County Medical Societies Civil Defense Conference. The two-day meeting at the Morrison Hotel, Chicago, was planned by the AMA's Council on National Defense. Dr. F. J. L. Blasingame, executive vice president, welcomed the conferees on behalf of the American Medical Association, and Dr. Gunnar Gundersen, AMA president, spoke on "The Profession's Responsibilities in Civil Defense." Officials of the newly-created Office of Civil and Defense Mobilization reported on the expanding role of the federal government's defense program and the medical and health aspects of civil defense as they pertain to the new program.

### **Federal Agencies Meeting on Proposed Airmail Ban on Vaccines**

Federal agencies, including Defense Department and Public Health Service, meet next week on a proposal of the Post Office Department to ban the airmail shipment of etiological agents as well as vaccines and serums. Health officials are inclined to view the proposal as seriously hampering medicine because so much of today's materials must be moved swiftly by air.



## Resident Quotas Almost Filled Under Berry Plan

An upturn in the rate of resident volunteering under the Berry plan since early August has satisfied Defense Department requirements in all specialties except otolaryngology and psychiatry, where deficits were expected. However, interns continue slow to apply for commissions, and there is a deficit of about 600, indicating only 150 volunteered in the last six weeks or so. The Defense Department deadline for accepting intern applications for reserve commissions, originally set for September 15, has been extended. If sufficient volunteers do not apply in the next few months, a department spokesman said, a call will have to be placed with Selective Service under the doctor draft next year.

## 19 States Get Maximum U. S. Aid for Public Assistance

Nineteen states are entitled to the maximum percentage of Federal funds for public assistance and 19 are held to the minimum under the new system which went into effect October 1. The money includes medical care costs as well as all other items of living expense. While no official figures are available, it is estimated that possibly half a billion dollars (U. S. and state funds) will be spent annually for medical care once the new program is under way. Recipients are in four categories, the needy aged, the disabled, dependent children and their sponsors, and the blind. Arkansas will get a 65% U. S. contribution and this is maximal amount.

## Invite Labor to Third Party Conferences

The Council on Medical Service has issued invitations to 10 medical directors of medical care programs, sponsored directly or indirectly by labor unions, to meet with the AMA for the purpose of developing "general principles and policies which may be applied to the relationship between third parties and members of the medical profession."

The council's letter said in part: "These discussions will be of an informal but informative nature. They will be conducted in an atmosphere where a friendly ex-

change of ideas can take place. The meetings will, it is hoped, initiate discussions along lines of mutual interest which can be pursued at such subsequent intervals as may be considered necessary."

The proposed meeting would be the first of a series with third party groups.

## New Committee on Insurance And Prepayment Plans

Meeting in Chicago during the Aug. 16-17 weekend, the AMA Council on Medical Service completed reorganization plans designed to step up AMA activities in the field of insurance.

Previously, the Board of Trustees had approved proposed reorganization changes, including dissolution of the present committee on prepayment medical and hospital service and the committee on relations with lay-sponsored voluntary health plans. The activities of these two groups will be taken over by a new committee on insurance and prepayment plans.

## Ask AMA Help on Nursing Accreditation

The AHA House of Delegates also adopted a resolution which would explore the possibility of establishing an independent joint commission on accreditation of hospital schools of nursing.

The resolution as adopted said:

"To request the National League for Nursing and the American Medical Association to join the American Hospital Association in establishing as rapidly as feasible an independent joint commission on accreditation of hospital schools of nursing, to be composed of these and possibly other groups, in order to spread the responsibility and financing for the accreditation program more fairly among those who benefit from the services of graduates of hospital schools of nursing."

## Care of Aged

The House of Delegates of the American Hospital Association, meeting in Chicago last week, adopted a statement of policy with respect to meeting the hospital needs of the aged. The statement, which supersedes all previous actions taken by the association, follows:

1. The American Hospital Association is convinced that retired aged persons face a pressing problem in financing their hospital care.

2. It believes that federal legislation will be necessary to solve the problem satisfactorily. It has, however, serious misgivings with respect to the use of compulsory health insurance for financing hospital care even for the retired aged.

3. It believes that all possible solutions must be vigorously explored, including methods by which the dangers inherent in the Social Security approach can be avoided.

4. It believes that every realistic effort should be made to meet the hospital needs of the retired aged principally through mechanisms utilizing existing systems of voluntary prepayment. However, it is conceivable that the use of Social Security to provide the mechanisms to assist in the solution of the problem of financing these needs may be necessary ultimately.

5. It believes that any legislation developed to provide for government participation to meet the hospital needs of the retired aged should be so devised as to strengthen the voluntary prepayment systems, and should conform to the following principles:

a. Legislation designed to provide for the hospital needs of the retired aged should provide essential hospital services and should exclude custodial care provided for nonmedical reasons.

b. Government participation should be restricted to persons over 65 who are not regularly and substantially employed. The voluntary prepayment system provides a satisfactory mechanism for the coverage of other persons, regardless of age.

c. Any program in which the federal government participates to meet the hospital needs of the nonindigent aged should emphasize individual responsibility and make the application of a means test unnecessary for obtaining benefits.

d. Such a program should be based on the service benefit principle and should provide benefits sufficiently comprehensive to remove the major economic barriers to hospital care for the retired aged.

e. Such a program should make benefits available through non-profit prepayment plans.

f. Hospitals should be paid fully for the cost of care rendered.

g. Such a program should not provide services in facilities operated by the federal government.

h. Such a program should provide reasonable criteria to determine the eligibility of hospitals to participate, but the federal government should be precluded from interfering in the administration and operation of hospitals providing the services.

i. Such a program should maintain the free choice of doctor and hospital by the recipient.

j. Such a program should permit and encourage continuous adaptation to new knowledge in the provision of services.

#### **Forand-Type Bills Discussed as Senate Votes on Social Security**

Evidence that the Forand idea for hospitalization under social security is far from a dead issue, and will be back before Congress again for decision next year, came in the Senate debate as that body approved a bill to liberalize the OASI and public assistance programs.

Senator Wayne Morse (D., Oregon) first revived the Forand idea when he moved to substitute his own social security bill for the measure that had passed the House and cleared the Senate Finance Committee. The Morse proposal would increase benefits about 25%, set up a hospital-surgical care plan along the Forand lines, and boost taxes enough to pay for the benefits. Although he admitted his amendment had no chance now, Senator Morse insisted on a voice vote on it, with the expected defeat.

Next to plug for the Forand principle was Senator Humphrey (D., Minn.) whose bill would provide hospitalization but not surgical care. Senator Humphrey commented that he thought his changes "should be enacted this year," but he withdrew the amendments before time for a vote.

As passed by the Senate the social security amendments were accepted by the House, thus obviating the need for a con-



## FEATURES

### LEGISLATIVE BOXSCORE, 85th CONGRESS, 2nd SESSION

August 29, 1958

The 85th Congress came to an end in the early morning hours of August 24. It enacted a large number of health measures, the more important ones being listed in this boxscore. It also failed to act on some bills in the closing hours. In all likelihood, they will be introduced anew in the 86th Congress convening next January 7. At least five of the bills enacted still are awaiting the President's signature and assignment of a public law number.

SUBJECT	BILL NO.	HOUSE	SENATE
Public Works Loans	S. 3497	Voted Down 8/1	Passed 4/16
Civilian Pay (VA Doctors)	S. 734	Public Law 85-462, June 20	
Military Pay	H.R. 11470	Public Law 85-422, May 20	
Pub. Health School Grants	H.R. 11414	Public Law 85-544, July 22	
HEW Appropriations	H.R. 11645	Public Law 85-580, Aug. 1	
Union Health Plans	S. 2888	Awaiting Presidential Signature	
Social Security	H.R. 13549*	Awaiting Presidential Signature	
Med. School Aid	H.R. 6874	Hearings Held	
	S. 1917	In Committee	
Research Facilities	H.R. 12876	Awaiting Presidential Signature	
Chemical Additives	H.R. 13254	Awaiting Presidential Signature	
Jenkins-Keogh Taxes	H.R. 10	Passed 7/28	
	S. 3194	In Committee	
Hill Burton Extension	H.R. 12628	Public Law 85-664, Aug. 14	
Hill-Burton Loans	H.R. 12694	Public Law 85-589, Aug. 1	
Federal Aviation Agency	S. 3880	Public Law 85-726, Aug. 23	
Civil Defense Aid	H.R. 7576	Public Law 85-606, Aug. 8	
Defense Reorganization	H.R. 12541	Public Law 85-599, Aug. 6	
Medicare Appropriations	H.R. 12738	Public Law 85-724, Aug. 22	
Nursing Home Loans	S. 4035	Voted Down 8/18	Passed 7/11
	H.R. 13776	Pending	
Presumption of Service	H.R. 413	Passed 7/7	Postponed
Connection	H.R. 1143	Passed 7/21	
VA Hospitalization	H.R. 10028	Reported 7/30	
Aging Conference	H.R. 9822	Awaiting Presidential Signature	

**NO ACTION:** \*Medical Care for Aged (Forand's H.R. 9467) ; Grants and Scholarships for Nursing (H.R. 306) ; National Compulsory Health Insurance (H.R. 3764) ; Health Insurance Pooling (H.R. 6506 and H.R. 6507) ; Rehabilitation (H.R. 10608 and S. 3551).

ference. Provisions are the same as reported in LETTER 85-85, except that the public assistance increase is limited to \$197 million a year, social security increases made effective in January, 1959, and public assistance increases October 1 of this year.

#### Congress Passes Bill for White House Conference on Aging

A White House conference on the problems of the aging, supported by the American Medical Association before commit-

tees of both Senate and House, will be held in January, 1961, under terms of a bill passed this week by Congress. A final report on the meeting is to be submitted to the President not later than 90 days after the conference. The purpose is to "arrive at facts and recommendations concerning the utilization of skills, experiences, and energies and the improvement of the conditions of our older people." Brought together will be representatives of Federal, state and local governments and professional and lay people working

in the field of the aging, as well as representatives from the general public.

### **Public Health School Grants Money Eliminated**

Accepting a conference committee report, Senate and House have eliminated \$1 million requested by Public Health Service for grants to schools of public health, under a bill passed earlier in the session. This means that no money will be made available to the schools at least until the next Congress makes an appropriation.

### **Defense Department Rules in Favor of Veterinary Services**

Secretary of Defense Neil McElroy has ruled that the veterinary services in the armed forces will be continued. This action reverses a decision of former Defense Secretary Charles Wilson who had proposed to abolish the services and transfer duties to various other agencies, including Agriculture Department, and also to the military medical services. The American Medical Association joined with the American Veterinary Medical Association in strongly opposing the move.

### **Doctor Draft Extension to be Sought by Defense Next Session**

Continued authority for selective call-up of physicians up to age 35 for military service is expected to be asked by the Defense Department when the new Congress convenes. Defense officials say they remain hopeful that armed forces requirements for doctors can be met through voluntary means. However, Defense announced recently that unless it receives more intern applicants for the Berry plan, use of the doctor draft will be necessary for the first time in two years.

weeks of February 15th to February 30th, 1959. The Course will include didactic lectures, anatomical dissections and surgical clinics.

### **THE WILLIAM AND LOLA HEUERMANN CANCER RESEARCH FELLOWSHIP AT THE UNIVERSITY OF TEXAS M. D. ANDERSON HOSPITAL AND TUMOR INSTITUTE HOUSTON, TEXAS**

This Fellowship is established in memory of William Heuermann of San Patricio County, Texas, who bequeathed a portion of his estate for Cancer Research at The University of Texas M. D. Anderson Hospital and Tumor Institute.

The Fellowship, for research in the field of Experimental Surgery, will be awarded to the applicant considered best qualified by a committee appointed by the Director of M. D. Anderson Hospital and Tumor Institute.

### **American Cancer Society**

The Oklahoma Division of the American Cancer Society will have a symposium at the Skirvin Hotel in Oklahoma City December 6, 1958, lasting from 9 a.m. until 5 p.m. Panelists discussing "The Treatment of Lymphomas and Leukemias" are to be Drs. William Dame-shak, Leon Dmochowski, Leon O. Jacobson and Wayne Rundles.

### **Annual Course in Anesthesiology**

The University of Texas Postgraduate School of Medicine announces the Fourth Annual Course in Anesthesiology to be held February 18, 19 and 20, 1959, in Houston, Texas.

The Course is designed to review theory and practice of commonly used anesthetic techniques and will include discussions of some of the newer drugs.

### **International College of Surgeons To Hold Mid-Atlantic Regional Meeting**

The United States Section, International College of Surgeons, will hold its Mid-Atlantic Regional Meeting at the Homestead, Hot Springs, Va., November 17-18.

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## ANNOUNCEMENTS

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### **Plastic Surgery Meeting in Mexico**

The American Otorhinologic Society for Plastic Surgery will give a Course in Plastic Surgery of the Head and Neck in Mexico City and Acapulco during the



### International

International College of Surgeons, 24th annual Congress of United States and Canadian Sections, Palmer House, Chicago, September 13-17, 1959. Write Dr. Ross T. McIntire, Executive Secretary, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

### Bahamas Conferences

The Sixth Bahamas Medical Conference, November 28th until December 18th; The First Bahamas Surgical Conference, December 29th until January 17th; The Serendipity Session, January 18th until January 31st, 1959.

The British Colonial Hotel where all sessions will be held, has made it possible for participants and their parties to avail themselves of the facilities of the fully redecorated hotel at the following reduced rates, PROVIDED THAT RESERVATIONS ARE MADE BY WRITING DIRECTLY TO BAHAMAS CONFERENCES, P. O. Box 4037, Fort Lauderdale, Florida, Telephone Jackson 3 7303 at Fort Lauderdale, Florida.

### Medical Assembly

The International Medical Assembly of Southwest Texas will hold its annual meeting January 26, 27, 28, 1959 in San Antonio, Texas, at the Gunter Hotel. Dr. L. Bonham Jones, President; Mr. S. E. Cockrell, Jr., Executive Secretary, 202 W. French Pl., San Antonio, Texas.

### University of Tenn. Postgraduate Courses

Twenty-five postgraduate courses for practitioners in the medical, dental and allied professions will be offered by the University of Tennessee Medical Units from September through next June.

Pediatrics, Sept. 15-19; Clinical Electrocardiography, Oct. 8-10; Obstetrics and Gynecology, Oct. 15-17; Allergy, Nov. 6-7; Radiology, Nov. 17-21; Urinary Tract Diseases — Diagnosis and Treatment, March 4-6; Office Management — Psychosomatic and Psychoneurotic Patients Encountered in General Practice, April 22-24; Fractures and Dislocations, April 29-May 1; Diagnosis and Treatment — Ear, Nose, and Throat Disorders, May 6-8; Selected Topics in Internal Medicine, May 11-15; Clinical Use of Radioisotopes, May

18-29; Tumors — Principles of Recognition and Treatment, July 15-17.

### Course in Practical Electrocardiography

The University of Texas, Postgraduate School of Medicine announces a course in PRACTICAL ELECTROCARDIOGRAPHY to be held in Houston, Texas, December 15 through 19, 1958. This course will emphasize Spatial Vector-Electrocardiography. Dr. Robert F. Grant of the National Heart Institute, one of the foremost authorities in this field, will be the J. J. and Una Truitt Lecturer for this course. In addition to the evening formal lectures there will be daytime electrocardiographic interpretation practice sessions.

### New Members —

Dr. Harold M. Tatum has been accepted for membership in the Independence County Medical Society. A native of Tyronza, Arkansas, Dr. Tatum received his preliminary education at Ouachita College and was graduated from the University of Arkansas School of Medicine in 1955. His internship at Arkansas Baptist Hospital was completed in June 1956 and he entered the United States Air Force for two years' service in July 1956. Dr. Tatum is a general practitioner with offices in the County Hospital at Melbourne.

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## Obituary

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Dr. Arthur L. Spain 85, of Letona, died August 23, 1958. Dr. Spain was born at Bee Branch in 1873. He attended Memphis Hospital Medical College and had been practicing medicine since 1903. He was a member of the Mountain Home Union Church and was an honorary lifetime member of the Searcy Masonic Lodge and the White County Medical Association. He had been a life member of the Arkansas Medical Society since 1950. Survivors include three nephews, Carl Lee of Damascus, Harvey Lee of North Little Rock and Ray Lee of Harrison; and a niece, Mrs. L. B. Evatt of Damascus.

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## PERSONALS AND NEWS ITEMS

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**Dr. L. E. Drewrey** of Camden, chairman for the committee of the aging of the Arkansas Medical Society, recently attended a national meeting in Chicago called by the American Medical Association to study the problems of the aging.

Arkansas physicians honored by the University of Tennessee Medical Units at commencement exercises in Memphis September 22 included **Dr. Elisha M. Gray** of Mountain Home, **Dr. Noah E. Fraser** of Conway, **Dr. C. A. Henry**, Booneville, **Dr. Mark Anderson Shelton** of Wabbaseka and **Dr. Don Carlos Carter** of Parkin. The University is recognizing the services these physicians have rendered to their communities during the half-century since their graduation from that University in 1908.

A Newport surgeon, **Dr. T. E. Williams**, has been elected to membership of the American Board of Abdominal Surgery. Dr. Williams is one of the owners of the Newport Hospital and Clinic.

**Dr. T. Duel Brown**, Little Rock, attended several meetings on hypnosis recently. He was present for an advance course in hypnosis offered by the American Society of Clinical Hypnosis held at the Conrad Hilton Hotel in Chicago and, immediately following this he presented a paper and served on a panel discussing urological problems at the first annual program of the Society. He also presented a paper at the eighth annual meeting of the Society for Clinical and Experimental Hypnosis in October. Dr. Brown plans to attend a seminar of the Southeastern Section of the American Urological Association at the Peabody Hotel in Memphis later this month.

**Dr. Anthony DePalma** has completed a three-year residency in plastic surgery, working in the University of Baylor and affiliated hospitals. He has returned to Fayetteville for the practice of his specialty in Northwest Arkansas.

An associate professor at the University of Arkansas Medical School was one of three American medical scientists who made a month's visit to the Soviet Union recently. **Dr. Samuel A. Corson**, associate professor of physiology and pharmacology at the school studied Russian advances in the fields of conditioned reflexes and psychomatic physiology.

**Dr. Joe Earl Cross** has opened offices for the practice of general medicine in West Memphis. He completed his internship at the University Hospital in Little Rock June 30, 1958.

Joining **Dr. H. A. Rands** in the practice of medicine in Dumas is **Dr. Wayne Lazenby**. Dr. Lazenby is a native of Plainview and is a graduate of the University of Arkansas School of Medicine.

**Dr. Paul L. Mahoney**, Little Rock, president of the American Otorhinologic Society for Plastic Surgery, Inc., presided at their meeting held October 12, 1958, at the Conrad Hilton Hotel, Chicago, Ill. This society is to give a course in Plastic Surgery of the Head and Neck in Mexico City and Acapulco during February and Dr. Mahoney will also preside at that meeting.

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## *Proceedings of Societies*

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After being adjourned for the summer, the Craighead-Poinsett Medical Society resumed their meetings in September at the Hotel Noble in Jonesboro. **Dr. Eldon L. Caffery** of Jonesboro spoke on "Some Urologic Problems."

The Ouachita County Medical Society met in regular monthly dinner session Thursday evening, September 4, at the Camden Hotel in Camden.

The Program consisted of a talk on "The Use of Blood and Blood Derivatives" by **Dr. William Ross** of the Department of Medicine, University of Arkansas School of Medicine and a talk on "Intestinal Obstruction" by **Dr. James Growden**, Professor of Surgery, University of Arkansas School of Medicine.



Dr. Ernest L. Burnell of Camden was elected to membership in the Society.

The Lee County Medical Society met September 11th, 1958, at Lee Memorial Hospital in Marianna. Dr. Sanford C. Monroe of Pine Bluff spoke on "The Value of Electrocardiograph in Diagnosis of Heart Disease."

The Fifth District Medical Society met in dinner session September 30, at the Camden Hotel, Camden, Ark. Guest speaker was Mr. Aubrey D. Gates, Director, Field Service Division, American Medical Assn., Chicago, Ill., who spoke on "What's Ahead for American Medicine."

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## *Woman's Auxiliary*

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The fall conference of Woman's Auxiliary to the Arkansas Medical Society was held Monday, September 8, 1958, at the Woman's City Club, Little Rock. The conference was for all state officers and committee chairman, county presidents, officers, committee chairmen and members-at-large. The purpose of the conference was to give all Auxiliary members an opportunity to learn more about the organization and the part an individual plays in its success. Mrs. Gordon P. Oates, state president, has stated the objective of the year is "Safeguard Today's Health for Tomorrow." Topics to be discussed and chairmen are: American Medical Education Foundation Fund, Mrs. Gustin Doren of Smackover; Today's Health, Mrs. Joe Reid of Arkadelphia; Safety, Mrs. C. C. Long of Ozark; Recruitment, Mrs. Louis Hundley of Pine Bluff; Community Service, Mrs. Jack Kennedy of Arkadelphia, national chairman, and Mrs. Herschel Wilmoth of Glenwood, state chairman; and Widening Horizon of National Foundation, Miss Virginia Blood, consultant, Women's Activities of National Foundation. Luncheon was served in the banquet room of the Club. Guest speakers were Dr. Jim Kolb of Clarksville, president-elect of the Arkansas Medical Society; Paul C. Schaefer, Fort Smith, executive secretary of the society; and Dr. El-

vin Shuffield, chairman of the Auxiliary Advisory Committee.

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## BOOK REVIEWS

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**Hormone Production in Endocrine Tumors:** Volume XII, Colloquia on Endocrinology (With cumulative index, vols. I-XII) Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., Director and Secretary to the Executive Council, CIBA Foundation, and Maeve O'Connor, B.A., Editorial Assistant. Illustrated; Pp. 294, 1958; Little, Brown, and Co. Boston; \$9.00.

This reference work is the last of a series on Endocrinology, being a report of conferences held in London, England, by leading research workers of Europe and America.

The particular studies herein deal with the study of the biochemical effects of tumors of the endocrine system. It is pointed out that modern methods of assay of hormones produced by the body and by the normal and abnormal functions of any gland, have made possible a new field of approach in the study of hormones and their action. These workers in this field discuss the theories and findings of their laboratory studies. The meetings serve for a forum for researchers to compare findings and to assist and stimulate new thought in their fields.

This book, and indeed the entire series are enlightening reading especially for laboratory research workers. Their restricted subject limit the audience but the series is a valuable addition for the libraries of students in the biological field.

**Therapeutic Exercise for Body Alignment and Function.** Marion Williams, Ph.D. Catherine Worthingham, Ph.D. W. B. Saunders Co. Philadelphia and London. Pages 127. April 16, 1957. \$3.50.

This loose-leaf book of 127 pages consists largely of diagrammatic sketches. It has a very satisfactory text and is written in an easy to read style. This textbook will give a better understanding of the principles of physio-therapy to those unacquainted with this field. A.K.

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### Answer—What's Your Diagnosis?

**ANATOMY AND DIAGNOSIS:** Thoracic and Lumbar Spine, Von Recklinghausen's Disease; age, 48; race, C; sex, F.

**CLINICAL DATA:** Knots on skin since early childhood. Recent increase in size of a few nodules. Intermittent "dull aches" in the RLQ.

**LAB DATA:** N. C.

**SURGERY:** Excision of neurofibromatosis of left chest. Wide excision of thoracic wall tumor.

**PATHOLOGY:** Neurofibromatosis with apparent transitions with neurogenic sarcoma.

**X-RAY FEATURES:** Neurofibromatosis involving nerves extending out of the lower dorsal and upper lumbar spine causing vertebral body and neural arch erosion in this location and probably involving the left sixth rib.

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From the Department of Radiology  
University of Arkansas Medical Center

# TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

## Community Trials of BCG Vaccination.

*Carroll E. Palmer, M.D., Lawrence W. Shaw, M.D., and George W. Comstock, M.D., The American Review of Tuberculosis and Pulmonary Diseases, June, 1958.*

**Introduction.** Although BCG was first administered to a human subject in 1921, its use during the next twenty-five years was based largely on results of laboratory studies and clinical experience gained from vaccinating highly exposed children and young adults. In the United States, little interest in BCG developed until the appearance in 1945-46 of reports of three studies which embodied some of the features now considered essential for adequately controlled trials. In two of these studies much less tuberculosis among vaccinated than unvaccinated subjects was reported. Other investigators could find no effect of vaccination on tuberculosis mortality. At about the same time, interest in BCG was stimulated by the rapidly expanding Scandinavian programs which were soon to culminate in the international mass campaigns sponsored by UNICEF and the World Health Organization.

In spite of a growing enthusiasm for BCG, its use remained limited in some countries, including the United States and Great Britain, reflecting the judgment that convincing evidence of its value was still lacking.

Meanwhile in the United States an advisory committee to the Surgeon General of the Public Health Service had expressed the view, in 1946, that the evidence was not sufficient to justify extensive use of BCG in this country and recommended that the Public Health Service undertake controlled trials in different kinds of population. In line with these recommendations, several trials were planned by the Tuberculosis Program of the Public Health Service. They were to be strictly controlled trials, designed to avoid at least some of the deficiencies of earlier studies. A system of allocation was to be used which would ensure the similarity of a vaccinated and an

unvaccinated control group, and every precaution would be taken to avoid bias. Tuberculin reactors, although not considered eligible for vaccination, would be included in the study population. By observing the number of new cases of tuberculosis appearing among the reactors, as well as among the vaccinated and controls, it would be possible to determine how much of the total amount of tuberculosis could have been prevented by vaccinating all nonreac-

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● A progress report on two controlled trials of BCG vaccination shows that persons already infected with the tubercle bacillus are now at greatest risk. In this country the advantages of vaccination are outweighed by the disadvantages.

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tors. The follow-up system would utilize medical, public health and vital statistics reporting systems as an economical way to obtain sufficient and at the same time unbiased information on new cases of tuberculosis which develop in the study population. Large numbers of persons living under various conditions would be followed for a sufficient period of time to obtain information on both the immediate and long-range effects of vaccination.

After exploratory studies in 1947 among school children in Muscogee County, Georgia, and patients of mental hospitals in Georgia and Michigan, four controlled trials were undertaken. To test the value of BCG for selected "high-risk" groups, one trial was started among patients of Ohio mental institutions in 1948, and another among American Indian school children in 1949. A third trial was also started in 1949 among children in Puerto Rico; and, to test the usefulness of BCG in a general population in the continental United States, a fourth trial was begun in 1950 in Muscogee County, Georgia, and Russell County, Alabama. A progress report of the community trials in Puerto Rico and in Muscogee and Russell Counties during the first six to seven years of follow-up observation is here summarized. (The detailed account of the methods and procedures employed in these trials is omitted because of space requirements. Ed.)

## SUMMARY

A progress report has been made after a follow-up period of six to seven years of





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symptoms  
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**SEARLE**

\*A Symposium on the Pharmacologic Effects of Dartal on the Liver, Chicago, Searle Research Laboratories, Feb. 7, 1958.

two controlled trials of BCG vaccination, initiated and directed by the Public Health Service. One trial, on children aged one to eighteen years, is in Puerto Rico, an area where tuberculosis has been a serious problem for many years; the other, on persons more than five years of age, is in the community formed by Muscogee County, Georgia, and Russell County, Alabama, where the tuberculosis problem is similar to that found in many other communities in this country. More than a quarter of a million persons were placed under study: 112,000 tuberculin reactors, and 144,000 nonreactors who were allocated by a randomization scheme to vaccinated and control (unvaccinated groups). For the identification of new cases of tuberculosis appearing in the study populations, the established medical, public health, and vital statistics reporting systems were deliberately chosen as being sufficient for the purposes of the study, and also as being more likely to yield unbiased information than systematic periodic examinations. Certain policies and techniques were adopted as safeguards against the introduction of bias in the diagnosis and reporting of cases.

The most striking finding of both trials was that the risk of developing tuberculosis was much greater for persons who were tuberculin reactors on entry than for those who were nonreactors. Of the total number of cases that appeared during the follow-up period, 75 per cent were among reactors; consequently, only the 25 per cent of the cases that would have appeared among the initial nonreactors could have been prevented if vaccination had been completely effective.

Tuberculosis case rates among nonreactors were low. In Puerto Rico the rate was 43 per 100,000 per year among controls and

30 among vaccinees. The difference, representing 31 per cent fewer cases among the vaccinees than among the controls, is statistically significant. In the Muscogee-Russell trial, the corresponding rates were 22 among controls and 14 among vaccinees, but the difference (36 per cent) is not statistically significant. If all nonreactors had been vaccinated, the total number of cases in the study populations would have been reduced by 8 to 9 per cent—an estimate obtained by applying a reduction of 31 to 36 per cent to the 25 per cent of the cases which would have appeared in those who could have been vaccinated.

The low case rates among nonreactors can be directly attributed to the present low risk of acquiring new infections. Evidence of low and falling infection rates in this country is found both in the present trials and in other recent studies. Because BCG cannot help those who are already infected, nor those who will not become infected, and may be helpful only to a portion of the decreasing few who will become infected in the future, it is apparent that vaccination cannot be very useful in controlling tuberculosis in this country. Moreover, with the rapid decline in tuberculous infection, the tuberculin test is becoming increasingly more valuable for epidemiologic, case-finding, and diagnostic purposes. These uses of the tuberculin test are destroyed by vaccination, which makes it virtually impossible to identify the naturally infected persons. And, as those who are already infected are now the group at greatest risk, it is upon them that tuberculosis control activities should be focused if the disease is to be eradicated. The position is taken that in most situations in this country today the advantages of vaccination are outweighed by the disadvantages.



# The JOURNAL

## OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

DECEMBER, 1958

Number 7

### The Diagnosis of Gynecological Tumors

FELIX RUTLEDGE, M.D.\*

The three most common carcinomas in the female pelvis are carcinoma of the cervix, the corpus (or endometrium) and the ovary. Carcinoma of the breast is the only other malignancy of the female in greater frequency.

This year many of you will diagnose three or four, and possibly more cases, yet other patients will go undetected, since many patients go through a period of months, and often years, of the sub-clinical, but detectable phase, before the diagnosis is made.

In cases of carcinoma of the cervix developing by progression through in situ into invasive carcinoma, often the disease could have been discovered as long as ten years before. It is true that some lesions must develop more rapidly, for despite prompt attention to symptoms, the lesion has appeared quietly and has grown extensively when first seen. Fortunately, these patients are small in number.

We have means available to control this disease. The general use of vaginal smears to find preclinical cases and a more aggressive search for clinical disease could eliminate carcinoma of the cervix as the cause of death, yet today, carcinoma of the cervix is the greatest cause of cancer death.

Within one year we reviewed 170 cases of carcinoma of the cervix and found 73 of the 170 patients, or 43%, had symptoms over three months before seeking aid; of these, 45% had stage III or IV carcinoma. In 19% the physician had failed to specifically investigate the patient's com-

plaints for more than three months; 45% of these patients had late Stage III or IV disease. Fifteen of these patients, or 9%, represented both patient neglect and physician delay, resulting in 46% incidence of Stage III or IV disease. In 49, or approximately 29% of this group, there was neither patient or physician delay when the symptoms became apparent, and 38% late stage of disease was present when diagnosed. In all the situations, over one-third had advanced disease, and about the same incidence as an entire series of 512 cases treated five years ago.

Our incidence of 11% Stage I disease is very poor in comparison with other centers. This may be due to a lag in the use of detection methods or problems related to the large number of Negroes and Latin American patients. We do know that the cure rate is highest in the Anglo-American, next the Negro, and lowest the Latin American; not only is their disease more advanced, but they do not withstand the treatment well and probably their disease is more lethal. Yet, even without these problems, if we interest ourselves with the symptomatic phase of this disease in any racial group, we may always have over one-third of our cases in the late stage. We need to extend our diagnostic efforts with Papanicolaou smears on the asymptomatic group to counteract some of the omissions of the clinical phase.

Aside from carcinoma of the skin, there is probably no other carcinoma in the body more easily diagnosed than carcinoma of the cervix. The cervix is easily accessible to visualization, palpation, and sampling. It is relatively insensitive so

\*Gynecologist-in-Chief, The University of Texas, M.D. Anderson Hospital and Tumor Institute, Texas Medical Center, Houston, Texas.

\*\*Presented May 6, 1958, at the annual session of the Arkansas Medical Society, Hot Springs, Ark.

that biopsies can be taken without anesthesia. The cervix heals without complication; minimal bleeding can be expected, and psychically such bleeding is well tolerated by the patient. No elaborate diagnostic instruments are required.

The plan for irradiating late stage of disease at the present would be to take periodic smears on all adult female patients who come to your office, especially those without a specific complaint. Those patients presenting such symptoms as menorrhagia, intermenstrual bleeding, post-coital bleeding, post-menopausal bleeding, or watery type vaginal discharge, must be examined, a smear and biopsy taken. With these complaints the disease is symptomatic and one should not rely entirely on the smear. The appearance of the cervix, the age of the patient, and the findings on pelvic examination will determine what type biopsy to take. If the normal anatomy of the cervix is preserved, quadrant biopsies are taken. A sampling of the endometrium and upper cervical canal with endometrial biopsy curette increases completeness of the search. Abnormal bleeding must be investigated by biopsy for a benign looking cervix may still have early carcinoma, and no amount of clinical experience trains the eye to exclude carcinoma of the cervix. The greatest incidence of cervical carcinoma occurs around 40 to 50 years, however, there is a very significant number in the thirties and twenties. Often these younger patients are greatly neglected and falsely reassured on the basis of youth until they have advanced carcinoma.

The adenocarcinoma of the corpus is the next in frequency and importance, but with more favorable clinical behavior. It is a disease often of long standing and slow growth, with greater time opportunity for detection. It occurs in the thick muscular wall uterus which tends to contain the growth and also serves as a good receptacle for radium. There is a slower rate of lymphatic dissemination. The uterus is accessible to complete surgical excision and both radiation and surgery are well tolerated. The overall cure rate can be near 75%. Yet it is difficult to administer full therapy to a certain percentage of cases for this is a disease of the older

age patient who is obese, hypertensive and diabetic.

Routine smear detection methods are not as efficient as for cervical carcinoma, and no simple effective detection method is available. However, the diagnosis is not difficult and the percentage of advanced untreatable cases is much less than carcinoma of the cervix.

Plan of detection of endometrial carcinoma: the cause for post-menopausal bleeding can only be excluded by uterine curettage. Menopausal abnormal bleeding is also considered due to a malignancy until definitely determined otherwise, and curettage will often be required. Even though due to benign changes, the patient who has trouble with her periods during menopause will more often have endometrial carcinoma later. These patients should be observed more carefully. The Papanicolaou smear may lead strong suspicion of endometrial carcinoma and the endometrial biopsy may even diagnose endometrial carcinoma; neither can eliminate the possibility of its presence.

Ovarian carcinoma, the third most common of the female pelvic malignancies, is the most difficult to detect in the early phases, and the poorest therapeutic success. We have no effective control for large scale use; no new effective methods have been found to detect this disease, therefore the alertness of the clinician, relying on the signs and symptoms, contributes the most to cure. The most consistent symptom of early disease is not in the pelvis or pelvic organs, but of the digestive tract. We have repeatedly obtained histories of this complaint. The onset is vague, not localized, and often becomes severe or persistent. Frequently the gastrointestinal tract is first investigated.

Occasionally acute changes in the ovarian growth, initiated by torsion, intracystic hemorrhage or spontaneous rupture, will lead to detection. The neoplasm that first develops as a benign process with malignant change will often give opportunity to diagnose the disease in the early phase. This fact frequently poses the problem of what size ovarian cyst should be removed immediately, which should be observed one or two months?



Solid ovarian masses or cystic masses with areas of hardness or nodularity should not be observed. Abdominal fluid strongly suggests malignancy. Except in cases of abdominal carcinomatosis, abdominal paracentesis should be avoided. A carcinomatous cyst may be perforated with seeding of the peritoneal surfaces.

Periodic pelvic examination, after empty bladder and empty rectum, is the most effective method for detecting early ovarian carcinoma. Vaginal smears are not generally used for this disease, although occasionally positive in ovarian carcinoma, a negative smear is of no value. Roentgenography may be helpful in diagnosing a dermoid cyst, rarely a serous cystadenocarcinoma can be diagnosed by peculiar radiolucent bodies (psammoma).

The functioning hormone producing tumors have received extensive attention in the medical journals. They induce very interesting symptoms and physical changes, but these tumors are not the big problem, they are rare, the degree of malignancy much less than the serous, pseudomucinous and solid adenocarcinoma of the ovary.

At the time of surgery, the problem of whether the mass is benign or malignant may again arise. In the very young, unilateral oophorectomy may be justified, however, always examine the opposite ovary because of the frequency in bilateral

involvement. Papillary excrescences should alert the operator to the possibility of malignancy. The mass should be opened in the operating room before the closure of the abdomen.

A cystic mass, regardless of size, should not be perforated in the abdomen; great care and time should be devoted to preventing this from happening accidentally; this may necessitate going down to the mass, rather than delivery through the incision for removal. Inspect the abdomen and pelvis for implantations for residual disease. This information will be needed by the radiotherapist if the patient is to have postoperative x-ray therapy.

#### CONCLUSION

With all our problems with carcinoma of the cervix, we are able to cure nearly half of all the patients seen. There has been a great reduction in the incidence of radiation complications. Today there is less reason for the patient to feel pessimistic about this disease, or to dread radiation burns. An attitude of hopelessness is not justified, nor is an attitude of disdain safe.

The cure rate of 75% for adenocarcinoma of the corpus is good, but can be improved.

The grounds for pessimism, if any exist, is in the carcinoma of the ovary, for here we have our lowest salvage.

# Radiation Protection

GEORGE REGNIER, M.D.\*

Particularly in view of the publicity given to the problem of radioactive fallout, radiation protection is currently a subject of considerable general interest. The possibility that radiation could have harmful results was recognized fairly early, and for over forty years radiologists have attempted to see that they, their employees, and their patients receive as little radiation as possible consistent with proper medical diagnosis and therapy. In more recent years we have had certain standards of so-called permissible dosage, and the revision of these standards has always been in the direction of a lower amount of radiation. A very interesting study along this line was recently conducted by Braestrup, a physicist. (1) By comparing the radiation output from a 1930 model x-ray machine to that of a 1957 model, he calculated that the dosage received by radiologists in 1930 was approximately 100 roentgens a year whereas the yearly dose was reduced to about one roentgen with present standards of protection. At this time our standards call for not more than 0.3 roentgen weekly of total body radiation and not more than 1.5 roentgens a week to the skin of the hands. I believe that this dosage limitation will prove effective in preventing such harmful effects as skin burns and, probably, leukemia.

Actually, damage from radiation is a problem with numerous facets. The damage may well be divided into somatic and genetic changes. From a genetic standpoint, it would appear that there is actually no permissible dosage, for a very small dose may produce a harmful mutation. The number of mutations in the population as a whole must be considered rather than the number in any particular individual. Some recent work at one of the atomic energy projects (2) would indicate that the average roentgen dose from x-ray examinations accumulated through age thirty by a given individual is less than twenty-five per cent of the

dose accumulated in that time from natural background radiation. We cannot, of course, eliminate natural background radiation.

Of the natural or spontaneous mutations, only a small fraction are caused by radiation. The gonadal exposure required to double the natural mutation rate is many times that received from cosmic and terrestrial radiation which is less than 0.1 roentgen a year in most regions. We are really in the dark as to the exact genetic effects caused by radiation. It is manifestly impossible to carry on long-term experiments with the human population. From experimentation with animals it would appear that the amount of radiation necessary to double their mutation rate may be only one-tenth as much as is necessary for insects (3), which has been estimated variously as between 15 and 150 roentgens.

Our interest in radiation protection concerns three phases of the problem: (1) Protection for ourselves, the radiologists, for we daily face exposure to a greater amount of ionizing radiation than does the population generally; (2) protection for those working with us as technicians, although their occupational exposure certainly should be less than our own; (3) protection of our patients. With modern equipment and practices it is almost impossible for a patient to receive serious radiation damage, such as a skin burn, from use of diagnostic x-ray procedures. You are all aware of some tragic accidents which happened in past years to people untrained in radiation when they were allowed unlimited access to a fluoroscope. In this regard, it is well to refer again to the work of Braestrup and the dangers in fluoroscopy. In the earlier fluoroscopes there was a close tube-table distance, 10 inches in his example, and the tube had little or no added filtration. This resulted in a very soft radiation striking the patient. The dosage at the table top was approximately 80 roentgens a minute as measured in air. Present day fluoroscopes with an 18-inch tube-table

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\*\*Presented May 6, 1958, at the annual session of the Ark. Med. Soc., Hot Springs, Ark.



distance, 2.5 mm. A1. total filtration, and with a limiting cone which closely approaches the table top have an output at this point of about 5 to 10 roentgens a minute. Measurements of some of the machines we use which have 3.0 mm. A1. total filtration show a roentgen output as small as 3.5 roentgens a minute at 85 KV and 4.0 ma. Theoretically no fluoroscope should permit the useful beam to extend outside the limits of the lead glass protected screen, but in actual practice this is usually unavoidable. For certain procedures, such as limited and rapid scanning of the major portion of the chest, it is difficult to have the shutters so arranged that a sufficiently large field can be had with the screen operating at close distances to the table, and at the same time keep the beam from becoming larger than the lead glass when a greater distance of screen from table top is necessary. Some of the newer machines have a surrounding lead shield built into the fluoroscope to take care of this situation. During the past twenty-five years the thickness of lead equivalent in the glass has been increased from 1.25 mm. to 1.5 mm.

Aprons of lead rubber or lead glass fabric and gloves having as much as 0.5 mm. lead equivalent have served to give the radiologist much more protection. In regard to this protective equipment, it is interesting to note in Braestrup's study that the dosage of roentgens an hour to the radiologist's abdomen from the old type fluoroscope was 0.318 roentgens an hour as opposed to 0.1 roentgen an hour from the latest type of fluoroscope. In addition, beneath a lead apron containing 0.5 mm. lead equivalent, the dosage rate is only 0.004 roentgen an hour.

A device which offers the radiologist considerable additional protection is the lead rubber apron which hangs from the fluoroscopic screen on most x-ray machines. This apron is of some benefit when fluoroscopy with the patient erect, but I believe it is particularly valuable when fluoroscopy with the patient in a horizontal position. It was shown by Russell Morgan's studies (4) some years ago that the dosage of scattered radiation may be as much as 2.0 roentgens an hour at the table margin. Using a phantom, I have checked on the efficiency of the

aprons we use and find that they diminish the radiation to the radiologist's abdomen by a factor of 40. When this reduction in radiation is added to that achieved by the lead rubber apron worn by the radiologist, the dosage his body actually receives is very small indeed. In addition to the long cone which collimates the fluoroscopic beam of radiation, the scatter from under the table is limited by a metal strip which tends to close the Bucky slot opening when the Bucky is at the foot of the table. Many of these strips in actual practice will diminish the size of the opening rather markedly without completely occluding it. In checking this point, however, I believe that it does offer a considerable degree of protection and does eliminate a great deal of stray radiation from this source.

I am sure that most of the radiation which the radiologist receives comes from his fluoroscopic work, and a great deal depends upon his work habits. I was taught to use 80 KV and 5.0 ma. for most fluoroscopic work, but I have since changed to 85 KV and 4.0 ma. This does not essentially change the radiation output, but I believe that I can conduct the examination a little more rapidly and more efficiently on most patients.

A great deal of publicity has been given in the past to the shorter life span of the radiologists as compared to physicians as a whole and to the much greater frequency of death from leukemia among radiologists. (5, 6) I believe that Braestrup's study shows rather clearly the reasons such a situation existed, but I believe it positively suggests that radiologists may expect a more nearly equal life span in the future.

Second to our own protection, we must consider the radiation exposure of our personnel which, with modern equipment and with well trained technical assistants, should be quite small. Film badge studies on our hospital personnel would indicate that the weekly dosage is usually 0.005 to 0.01 roentgen of total body radiation. The greatest dosages usually occur to those persons using the portable apparatus in the operating room, and even this does not run more than 0.02 roentgen a day which is well within the permissible limits. One difficulty we have always had, and will

probably continue to have to some degree, is that of the technicians holding patients while film exposures are being made. This can be reduced to a minimum by the use of mechanical devices and by the use of persons not ordinarily exposed to radiation in other fashions. I have noticed that some technicians, and particularly the older ones who have been accustomed to holding patients for years, are prone to ignore the dangers inherent in this procedure. An example is seen in cerebral arteriograms. A rather long cone is used on the tube which effectively limits the primary radiation beam to the skull area and actually rather markedly cone-cuts the films in the Sanchez-Perez machine. This cone reaches almost to the patient's head. During exposure of the film the patient has some tendency to move the head, and one of our technicians, I found, was making a practice of holding one hand on the patient's chin to steady his head during the exposure. Measurements would indicate that the technician's hand was receiving almost 1.3 roentgens for a series of six exposures, and that by holding the chin for the anteroposterior and the lateral views he was receiving something like 2.5 roentgens to the skin of the hand. By use of a lead glove it was demonstrated that the total amount of radiation to the fingers was no more than about 0.01 roentgen for a series of six exposures. The lead glove was sufficiently flexible so that actually I do not believe it handicapped the technician at all during such procedures. It is my belief that holding patients is the chief danger as far as technicians are concerned.

Our third responsibility lies to our patients. As I stated earlier, it would be an extremely rare instance in which a patient might suffer skin damage from diagnostic radiation procedures because of the high degree of protection built into our present equipment. It is unlikely, also, that patients would ever receive total body radiation sufficient to cause any material increase in the incidence of leukemia. The possibility of genetic damage is always with us, particularly since such damage may have little quantitative relationship; that is, there is no dosage which will cause NO damage. The use of radiographic cones which will limit the x-ray

beam to the part under study will aid not only in obtaining better detail on the films of this part, but will also diminish the radiation to the patient in the areas of the body not being radiographed. One safety practice which we have adopted is the use of a cylinder rather than a cone in making chest films. This is one of the most frequently performed examinations and the use of a cone at the distance of 72 inches, which is ordinarily employed, results in exposure of the gonads to the direct radiation. By use of a cylinder the dosage to the gonads is limited to scattered radiation and this is infinitely less than that of the primary beam even at such a close distance to the primary beam. In lieu of this procedure, or perhaps together with it, I believe that we could use a lead or a lead rubber shield to protect the patient below the level of the waist in making such an examination. There are some examinations, of course, in which it is impossible to shield the gonads and at the same time obtain a proper study, but routine practice would be of particular I believe that shielding of the gonads as a significance and, of course, this is a procedure which should be followed in children and in those of child-bearing age. Beyond the age of childbearing, such precaution are superfluous, for we have only the possibility of somatic damage which is negligible.

The use of heavier filtrations of aluminum at the tube does very little to affect the density of the film, but it does a great deal to diminish the amount of radiation which the patient receives. In practice we have not changed our exposure techniques in going from a filtration of 1.0 mm. Al. to 3.0 mm. of Al.

It has been advocated by some that the patient should carry a small card or booklet in which would be recorded all diagnostic radiation exposures with values in roentgens. Actually this would result in a rather impractical situation, and the record obtained would probably be of no value whatsoever. The exposure, for instance, to a hand might be 3.0 roentgens, but this would bear no significant relationship to an exposure of perhaps the same magnitude to the foot. Certainly in terms of skin damage, of total body radiation, and of genetic damage this could not



be evaluated. It might be of some value if we could maintain a record of exposure to the gonads. In the male patient this would not be a particularly difficult task, but in the female patient it would involve considerable physical calculation for each exposure as well as some actual measurements on the skin. I am afraid that the time spent in this would greatly exceed the time spent in interpreting the films obtained.

Obviously, there are a great many other aspects in radiation protection which time will not permit me to discuss. In summary, then, I believe that our present day radiation exposure is probably not excessive and will not result in any significant somatic damage to us as radiologists. I believe the same applies to the technicians and to the patients. The unknown factor, of course, is the genetic damage. In view of the fact that we do not know, and perhaps never will know,

exactly what damages will result from genetic injury, it behooves us to exercise every precaution to minimize the amount of radiation to all. At the same time, however, we should attempt to allay the hysteria which has been aroused, particularly in the poorly informed laymen.

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# Advances in Surgical Treatment of Congenital Heart Disease

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Surgical history is the story of growth by evolution. Step by step one accomplishment has opened the door to another challenge; the solution of one problem has enabled the attempt to solve another of greater complexity. By the beginning of this century major intra-abdominal surgery was feasible; then in succession intracranial and intrathoracic procedures became possible. By 1950 only one cavity of all the cavities of the body remained sacrosanct — the interior of the heart. This decade, therefore, is historic — a decade to be recorded in surgical history as the one in which the last niche of the human body yielded to the intrusion of the surgeon.

The ability to work within the open heart was first made possible through the technic of hypothermia — a technic that has proved reasonably successful in the correction of certain abnormalities and can be carried out in a brief period. In order for the surgeon to operate within the heart for an extended period, however, whole body perfusion by means of a pump-oxygenator apparatus had to be accomplished. Various types of equipment have been developed to carry out this rather remarkable feat. Since the risk of the operation is related in part to the risk entailed by the perfusion, it becomes imminently important that the bypass apparatus be constructed to deliver a perfusion that is as nearly optimal as possible.

The modified Gibbon-type pump oxygenator which has been employed at the Mayo Clinic has admirably fulfilled these requirements (1). It is capable of delivering fully oxygenated blood at flow rates which approximate the cardiac output of the anesthetized patient, that is, about 2.3 liters per minute per square meter of body surface. Trauma to the blood delivered at this low rate is negligible. By means of the electronic level-sensing devices incorporated in the apparatus the volume of the blood within its circuit is constant at

all times, which in turn assures a constant blood volume within the patient at all times. The venous return from the patient is obtained through two large canulas placed in the superior and inferior vena cava respectively and led out from the heart through the right auricular appendage. After its oxygenation in the apparatus the blood is returned to the patient through a cannula inserted into the thoracic aorta through the stump of the previously divided left subclavian artery.

By means of such preparation it is possible to work within the emptied chambers of the heart without undue necessity for haste. The heart has been excluded from the circulation for as long as 90 to 120 minutes with resumption of adequate cardiac function thereafter. So safe is perfusion performed in this way that the risk of perfusion itself is considered to be reduced to about 2 or 3 per cent. At the time of this study, therefore, the risk of operation within the heart is determined primarily by the nature of the defect itself, by the technical difficulties which it presents, and by the hemodynamic response which follows its correction.

## VENTRICULAR SEPTAL DEFECT

The commonest congenital heart defect for which extracorporeal circulation has been utilized at the clinic is ventricular septal defect. In well over 90 per cent of the cases the defect has been located high in the ventricular septum, in its so-called membranous portion, directly subjacent to the aortic valve ring and alongside the tricuspid valve ring. The defects are oval with their long axes transverse to the outflow tract of the left ventricle. The posterior end of this defect is rather inaccessible when the surgeon works through an incision in the right ventricle unless he orients himself as though he were working from inside the left ventricle (2). With proper anatomic orientation, it is possible to obtain completely accurate closure, either by direct suture or by the insertion of a prosthesis of compressed polyvinyl (ivalon) sponge. It is the com-

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\*Read at the meeting of the Arkansas Medical Society, Hot Springs, Arkansas, May 5, 1958.



mon practice at the clinic to close these defects by direct suture.

The remaining 10 per cent or less of ventricular septal defects occur in the muscular or lower portion of the septum and not uncommonly they are multiple.

With a few notable exceptions, any child with a ventricular septal defect is a candidate for surgical repair of the defect. A small ventricular septal defect which permits exceedingly small shunts is probably a lesser threat to the patient's health and longevity than surgical correction. On the other end of the scale are those patients in whom severe pulmonary hypertension has developed in association with reversal of the shunt; under these circumstances closure of the defect would merely increase pulmonary hypertension. Obviously such patients are not candidates for operation.

The results of repair of ventricular septal defect must be assessed in terms of hospital mortality and completeness of repair. With the many improvements which have gradually evolved, the hospital mortality rate for the repair of ventricular septal defect has fallen from approximately 20 per cent to 7 per cent in the last 30 cases. The greatest remaining hazard in this group of patients is the development of complete heart block as a result of injury to the major conduction pathways which lie at the margins of the defect itself. This complication appears in about 20 per cent of the patients on whom operation was performed, and in only a minority does the rhythm revert to normal during the postoperative period. Most patients can be tided over the postoperative weeks and months satisfactorily, but it is the clinical impression of cardiovascular surgeons at the clinic that the patients are definitely handicapped by the block and that the long-term prognosis remains indefinite.

It does seem reasonable to expect an over-all hospital mortality rate of approximately 10 per cent or less when a ventricular septal defect is repaired under proper conditions. With refinement of surgical technic it is now apparent that complete repair of the defect and complete ablation of the shunt are possible in virtually all instances.

#### TETRALOGY OF FALLOT

The brilliant contribution to the treatment for tetralogy of Fallot by Blalock and Taussig (3) in 1944 will never be forgotten. The operation which they developed, consisting of the creation of an anastomosis between a systemic artery and an artery to the lung, is, however, a palliative operation. The open intracardiac repair of the tetralogy of Fallot is, in contrast, a corrective operation, but it is as challenging as any procedure which can confront the cardiovascular surgeon. The demands placed on the extracorporeal circulation are also great because of the prolonged time required for intracardiac manipulations.

The essential abnormalities in the tetralogy of Fallot are as follows: (1) a ventricular septal defect which at least approximates the diameter of the aortic valve, and (2) pulmonic stenosis which in a great majority of patients includes infundibular stenosis resulting from massive hypertrophy of the crista supraventricularis. Relief of the pulmonary stenosis and repair of the ventricular septal defect must be precise and complete. In some hearts relief of the pulmonary stenosis is particularly difficult since the outflow tract of the right ventricle may be extremely hypoplastic. Experience has shown that when it has been possible to establish adequate relief from pulmonary stenosis the risk of the operation is considerably less than when residual pulmonary stenosis occurs. Because of this it has become the practice at the clinic more and more commonly to enlarge the outflow tract of the right ventricle, and, when necessary, of the pulmonary valve ring by means of a diamond-shaped prosthesis of polyvinyl sponge which is sutured in the ventriculotomy in an appropriate manner. In certain instances it has been necessary to extend this prosthesis the entire length of the main pulmonary artery.

It is probably fair to say that at the time of this writing the risk of operation when open intracardiac repair is performed is slightly greater than the risk of palliative surgery such as the Blalock operation. Although the over-all hospital mortality rate has been 31 per cent, var-

ious improvements have resulted in reduction of that rate to 15 per cent in the 20 or more patients who have recently undergone this operation. It may well be that the over-all hospital mortality rate for this disease will settle in the neighborhood of 20 per cent.

Experience with intracardiac repair of the tetralogy of Fallot at the clinic over the last 2½ years has led to the conclusion that this technic is preferable to palliative-shunt operations. This conclusion also has been reached by Lillehei and his associates (4). Most important in making this choice for open intracardiac repair is the end result which can be achieved thereby. Perhaps nothing else is so dramatically rewarding as the transformation of a deeply cyanotic and severely incapacitated invalid child to a child of natural appearance and normal actions with the usual outlook for life.

#### ATRIAL SEPTAL DEFECT

Pressures within the atrial cavities are much lower than in the ventricles, and because of this, the repair of defects of the atrial septum can be carried out by means of the semiopen atrial-well technic as described by Gross and associates (5) and modified by Kirklin. This technic consists of suturing a rubber well to an incision in the right atrium. Blood rises into the well and through this pool of blood a prosthesis of polyvinyl sponge can be sutured to the margin of the defect with remarkable accuracy. The sponge is so fashioned that its flanged margin overlaps the margin of the defect on its left atrial side, thus providing a flap which effectively seals the entire periphery of the defect. Complete closures are uniformly obtained by this technic.

It is true that extracorporeal circulation and open cardiectomy are being advocated by many surgeons for the repair of this malformation. It is the consensus of cardiovascular surgeons at the clinic that such a complex method is not required for the usual atrial septal defect and we have reserved its use for those patients whose atrial pressure is highly elevated as a result of heart failure. The fact that at the clinic approximately 140 patients with uncomplicated atrial septal defect have had closure of their lesions by this tech-

nic with loss of only three patients persuades us that this method serves us best. No deaths have been encountered in the 42 children operated on for uncomplicated atrial septal defect.

#### OTHER CARDIAC ANOMALIES

Numerous other congenital cardiac anomalies which are less common than those already discussed are amenable to corrective surgical measures by means of extracorporeal circulation. For example, the majority of patients with pulmonic stenosis and an intact ventricular septum should be operated on by this technic (6), since only thereby can the surgeon eliminate the infundibular narrowing which frequently accompanies the valvular pulmonic stenosis and only thereby can the atrial septal defect, which is often present, also be closed.

Total anomalous pulmonary venous connection has been completely corrected in a number of patients, but again only through employment of extracorporeal circulation. In this anomaly a large communication is created between the left atrium and the common pulmonary venous trunk which lies posterior to the left atrium. At operation the atrial septal defect is closed as is the communication to the innominate vein, thus completely correcting the altered hemodynamics.

A rather frequently encountered intracardiac lesion is the so-called common atrioventricular canal which consists of both atrial septal and ventricular septal defects and clefts in the mitral valve and sometimes in the tricuspid valve. This most complex anomaly is correctable both by suturing the valve clefts and by closing the septal defect with a polyvinyl prosthesis (7). The severer the valvular distortion the more difficult is the repair and the greater is the surgical risk.

Rupture of an aneurysm of the aortic sinus represents a unique combination of congenital and acquired heart disease, and this, too, can be completely corrected by simple excision of the aneurysm and suturing its base during open cardiectomy (8).

In spite of the remarkable accomplishments in the field of intracardiac surgery during the past 8 years, many advances



are yet to be made. Some problems, now seemingly insurmountable, will soon be solved. Surely this field of surgical endeavor lends confirmation to the wisdom of the axiom that "whoever says something is impossible is apt to be interrupted by somebody already doing it."

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# ◆ *What's* NEW ◆

## Pathology

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Microtechniques are becoming increasingly more important in chemical pathology. Along with a broadened and more precise knowledge of the normal and abnormal constituents of the various fluids and tissues of the body has come a need for increased numbers of chemical tests in the proper prompt evaluation of disease processes and their adequate treatment.

Batteries of tests are often required in some of the diseases of vague symptomatology in order to localize the disease to one organ system. After this localization it may be necessary to run several tests to pin-point the functional disorder present.

Microtechniques are not new but their utilization in routine laboratory analysis for more than just an occasional procedure is new. In the past, it has not been unusual for the laboratory to require as much as 15 to 20 cc. of blood for the performance of three or four chemical procedures on the blood. If this is done on a healthy adult the amount of blood removed will be of no great consequence to the patient. If, however, several tests are done on successive days as diagnostic procedures or in following the course of treatment of disease, the amount of blood may be considerable. In the anemic or otherwise ill patient this may be more than the patient can afford to lose. In old or debilitated patients the blood volume may be decreased even before we begin our extensive blood studies. The amount of blood which can be withdrawn from children and infants, especially prematures, is quite limited. From this it becomes apparent that if we can get the same information from smaller quantities of blood without the need of vena puncture

and if the procedures are as economical to run as are the macrotechniques, then they should be considered in routine laboratory work-up of a patient.

The blood for most microtechniques can be obtained by a finger stick. A finger stick is usually preferred by patients over the vena puncture. Veins are preserved for further use if necessary in treatment. Some patients have few available veins when they are first seen for laboratory evaluation. There is the added advantage that a physician is in the macro procedures often required for the drawing of blood from infants, whereas with microtechniques the usual laboratory personnel can obtain the blood.

The question as to whether the information obtained from micro procedures is valid has been adequately answered. There are some slight differences between the results obtained from analysis of finger tip and vena puncture blood. This does not mean that the use of finger tip blood leads to erroneous results. It has been shown that micro methods are as reproducible as are the macro methods. In many instances the results are more accurate. We know that Beer's Law is often more accurate with dilute solutions than it is with concentrated solutions. In many of the tests the same chemicals and same proportions are used with micro as with macro methods. The only difference is the decreased or small amount of serum or plasma used and a proportionate decrease in the amount of chemicals used to produce the desired color or other reactions. We need a minor alteration in our photoelectric colorimeter for reading of smaller quantities of test solutions. Special cuvettes may be obtained which allow for continued accuracy in the readings.

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The economy of the procedure is evident. With some tests there may be an initial small outlay for cuvettes and pipettes suitable for micro procedures. Aside from this, the same basic equipment is used. Amounts of chemicals may be decreased by as much as several hundred fold and the time required for performing the tests is often decreased. More tests can be performed in one day by a single technologist. Space requirements in the lab may be reduced.

Many physicians and technologists have difficulty in visualizing the possibility of accuracy with micro methods before they are exposed to the procedures. They are reluctant to accept results obtained from 0.1 ml. of serum as being as accurate as that obtained from 2 ml. We often forget that some of our more accurate procedures in the past have been on micro and semi-micro method. Examples are the hemoglobin, hematocrit, sodium and potassium determinations.

Some of the procedures which are more frequently performed and which are adaptable to micro methods are the following:

1. Glucose
2. Serum Bilirubin
3. CO<sub>2</sub> Content
4. Sodium
5. Potassium
6. Chlorides

7. NPN
8. Hematocrit
9. Hemoglobin
10. Cephalin Flocculation
11. Thymol Turbidity
12. Icteric Index
13. Serum Protein

Natelson (1) in his publication "Microtechniques in Chemical Chemistry" lists numerous other procedures which can be satisfactorily carried out on small quantity basis.

It might seem to some that there is too much emphasis put on laboratory techniques as aids in the diagnosis of disease. True, if these are ordered without hint from clinical findings that they may be helpful, much expense may be thrown on the patient without any benefit being derived. On the other hand, we often see patients who have prolonged, undiagnosed illnesses with consequent expensive hospitalization who with proper laboratory evaluation could be diagnosed and, with treatment, rehabilitated in a short period of time. As we recognize the need for more laboratory procedures it becomes evident that microtechniques will in many instances replace macro procedures in our laboratories.

Reference: <sup>1</sup>Natelson, Samuel, Microtechniques of Clinical Chemistry for the Routine Laboratory, Charles C. Thomas, Publisher, Springfield, Illinois, U.S.A.

**A TEACHING SEMINAR**  
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## Patterns of Interpersonal Stress in Childhood

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When a child suffers from an emotional illness, it is natural to ask, "What is the diagnosis, and what is causing the condition?" The burden carried in this paper is that the truly significant part of the diagnosis has to do with the qualities and structure of the human relationships which have evolved around the child and not with hair-splitting labeling of the symptom pattern. The principal causes may not be in the present situation at all, but may spring from the past as an accumulation of ways of reacting to innumerable stressful situations involving the child and his family, the child and his teachers, the child and his outside associates. The actual symptoms may shift about a great deal, and by knowing only the symptoms one cannot deduce a specific cause. Furthermore, it is the rule that an emotional illness is not the result of *one specific cause*, but it is the end product of a complex of causes.

It is possible to characterize some of the typical key figure\*-child patterns which lead to emotional conflict within the child and this will be done by presentation of examples. But first I wish to present a discussion of certain background factors. If severe, the internal conflict will lead to tension and anxiety, which in turn will produce symptoms in a given individual, but knowledge of a conflict and the interpersonal pattern producing it will not enable even the expert to predict the form of the emotional illness which will occur.

To paraphrase the above: knowing that certain pathological interpersonal patterns exist does not enable one to predict

the form of the emotional illness; and solely from the characteristics of an emotional illness, one cannot with any certainty deduce causes. This is somewhat foreign to the thinking of the main body of medicine where a close-knit cause-effect relationship is taken as the norm. For example, a known pathogenic organism, the tubercle bacillus, typically produces certain patterns of illness. If successful in its invasion (and like in emotional illness, this success depends on constitutional factors and current state of health), it is apt to afflict the lungs in definite ways: primary complex, invasion of a lobe, abscess, cavity, and more rarely it lodges in bone or in the eye where it follows probable patterns. The pneumococcus and gonococcus are even more specific in the kinds of illness they produce. In surgery, pains in certain localities of the body in a high percentage of cases can be attributed to definite causes. By contrast, emotional tension resulting from person relationships and situations acting upon a certain personality may lead to the most unusual and unexpected symptoms. Theoretically perhaps, if one knew everything about a child's personality and his relationships, he could predict the symptoms the child would show when under stress. Now the individual who has been "invaded" by pathological human relationships must be considered at his beginnings.

Modern psychiatry has tended to skirt around the concept of psychological constitution as though it were somehow undemocratic or unjust to admit that human infants as well as puppies and kittens are born with different temperaments, with basically different ways of reacting

\*Significant persons.

\*\*Associate Professor, Dept. of Psychiatry, Univ. of Ark. School of Med., Little Rock, Arkansas.



to the stresses of life. Interestingly enough, though psychiatry long ago accepted the notion that individuals were born with different intellectual capacities, still, for many years it has avoided the idea of being born with different emotional or temperamental capacities. The difficulty of devising means of measuring temperament largely accounts for this. However, this neglect of constitutional factors has allowed the full force of investigation in psychiatry to focus upon environmental patterns and their intrapsychic corollaries, and a great body of valuable information has thus been made available as a result of these research and clinical studies.

For present purposes, constitutional factors and psychological constitution will be defined as follows: the intellectual and basic temperamental qualities and capacities or potentials with which an infant enters the world, as shaped by heredity and embryologic development. It is sometimes practical to include within the meaning of constitution the effects of injuries, mild to severe, sustained during the birth process and the effects of injuries or illness afflicting the central nervous system during the first few months of life.

Having been born with an individual constitution, the infant is planted within a highly complex and dynamic structure called the family. Out of the interplay between the original constitution and the key figures of the family the basic personality patterns are created which added all together make a unique personality. We believe the patterns become well-fixed, like well-travelled lines of transportation, during the first few years of life. These basic personality patterns (attitudes toward people, problems and pleasures, etc.) determine whether an individual deals efficiently or inefficiently with the world around him and with himself. One can imagine that a child with a deviant constitution placed within an ordinary, emotionally healthy family might develop with but little handicap, but in an unhealthy family, the resultant personality would be deformed and likely to have emotional problems, even mental illness. One can imagine that an infant with a well-endowed psychological consti-

tution would only develop a deformed personality if reared in a very disturbed family. If the components of the psychological constitution, like most biological phenomena, fall into the pattern of a bell curve, then most individuals would fall within a broad normal range and deviants would be few. The extreme constitutional deviants would be more apt to have deviant personalities independently of environment, and the normal group would tend toward normal personality unless reared in deviant families.

To pull the above discussion together: constitutional factors plus experiences with key figures give rise to a basic personality structure which is unique; this structure has its own characteristic strengths and weaknesses, and when it is subjected to certain powerful interpersonal pressures operating at odds to its own needs, an internal emotional disturbance develops (psychic tension or anxiety) which in turn manifests itself as symptoms. Examples of symptoms would be setting fires, running away, stealing, unreasonable fears, compulsions, etc. When the emotional disturbance or inner conflict is already present, almost any mildly stressful experience may serve as the stimulus which precipitates the full-blown symptom or symptom complex. Now follows four brief case histories from which the pathological patterns of relationships will emerge clearly. These are oft repeated patterns, each with its own embellishments, like variations on a theme in music.

Let us take the case of Virgie. She seemed to have been a sensitive and submissive child from infancy. She was the only child out of three whom mother succeeded in dominating completely. Mother was unhappy in marriage, disgruntled with her lot, dominating and distant. Virgie was as lovely as a doll and mother dressed and treated her like a doll. The child fell easily into this role. The father was away from home a great deal and took little part in rearing the children, so Virgie was given no contrary model by this key figure in her life. Virgie, in contrast to her sisters, fell into the role of mother's ideal daughter who was always compliant, obedient, and who told mother all her thoughts and feelings.

Since she told her everything, this made it impossible to harbor angry thoughts toward mother. Mother told relatives and friends proudly, "You know Virgie tells me everything." This well-grooved parent-child pattern worked quite well during childhood, but during early adolescence Virgie began to know about and to have feelings which she preferred to keep to herself. There were mild sexual urges manifesting a desire to dream about and talk about boys, and to indulge in the periphery of sex and romance as most adolescents do. In her growth toward individuality there also appeared strong feelings of irritation with mother and her binding ways. But so strong was her childlike loyalty to mother that she interpreted these feelings of irritation and the mild sexual urges as completely bad, immoral thoughts and strove doggedly to squelch them at the instant they came into her mind. For this child, the conflict was insoluble: she should confide in mother about all things, but how could she talk of hostilities to mother and her delicate romantic thoughts? The tension mounted and "black-out" spells appeared. She would suddenly feel far away, have a sinking sensation and her mind would go blank. These spells terrified her and her mother and in themselves added to the total psychological tension and so facilitated more spells. After a thorough investigation of the possibility of petit mal epilepsy, she was diagnosed as having hysteria or a *conversion reaction* as it is called nowadays. Putting Virgie's individual case into a general pattern, it would read like this: submissive, obedient, sweet-tempered, pure, moralistic child with dominating parent subjected to an onslaught of hostile and sexual urges from within and from companions which would be either unacceptable to parent or incompatible with child's concept of what parent would accept.

Now another case of a submissive child in an adverse setting. Both parents are essentially chilly and intellectual but attempt to do the "right thing according to the book." This is a bad pattern to begin with, like scattering seed on rocks. Since they believe in principle that couples should have children and should raise

them carefully, they set upon the task with a vengeance. Allie was watched in every move, guarded from every danger, told every proper thing to do. He was compliant and developed the pattern of looking to them for all decisions and directions. He was a solemn, quiet, lonely child and a perfect gentleman. As the parents grew in experience they began to realize that a boy should sometimes be boyish, rowdy and spontaneous, and they became more and more dissatisfied (especially in comparison with neighbors' children) with what they had created. Allie sensed their dissatisfaction, but had no idea as to why they were dissatisfied or how to correct himself. To him their attitude amounted to total rejection. He began to cry during the night and say that he had been a bad boy; his school work fell off, he could not concentrate in class; he withdrew from contact with other children; and he began to count everything from cars to telephone poles, even the number of beans he ate. Sometimes the mind, in its attempt to make things right, to correct some vague feeling of wrong, initiates maneuvers of precision which serve no objective purpose. The child was brought to us with the complaint from parents that he was unhappy, had no friends, and had a compulsion to count things. Here the basic pattern is submissive child plus cold, rejecting parents who make demands on child, then proceed to change the demands in a way incomprehensible to the child.

Now the case of Danny who was aggressive, demanding and scrappy from earliest times. His mother pampered and indulged him whereas father was a hard-shelled top sergeant who laid down rigid rules for the child's every move. Father preached against stealing and warned of the dangers of immorality. Danny was punished severely for infractions and was constantly told he was a liar, thief, "no 'count," and would end up in the penitentiary. Mother secretly backed Danny, but in front of father sided with father. She felt in Danny a kind of consolation for her unhappy marriage. Alone with Danny she was unable to say "No" to him about anything. The father continued to supervise and make rules about every detail of Danny's life. The



more Danny rebelled, the more father supervised. At the age of 15, his father was still telling him how much bathwater to draw, when to open a window, when to shut it, how his hair should be cut, and reminding him of his ultimate destination. Danny had stolen from home and school from his earliest years; and at the time he was brought to us, he was stealing cars for joy rides.

This is a complex pattern: aggressive child, pampering, spineless mother, tyrannical father. The more pampering mother became, the stricter father became, both to correct her fault and as an indirect battle with her. The stricter father became, the more pampering and protective mother became so as to make amends to the child for father's strictness and also as an indirect way of doing battle with father, since she had her own grudges against him quite apart from Danny. Now a double communication with two contradictory meanings is taking place: 1) father raves against thieving and immorality; 2) this suggests to the child that it must be something Dad has to fight against in himself and it must be something mighty desirable to require all this prohibition and preaching. Mother's communications are dual and contradictory also: she gives lip service to good behavior, yet, in action she backs him secretly no matter what he does. Another communication, by pampering him she indicates that he is a helpless child. The main goals in Danny's life become: 1) to gain admiration from anyone as an individual, as a person of some power and capability — if only for guts in stealing; and 2) to fight back blindly at the constantly demanding, nagging father. In any way he can disgrace, disturb, or annoy father he relishes. This pattern becomes so set and so blind that it spreads out toward any person in authority.

Next the case of Nicky who is seven and has been out of school for a year because of fits of screaming every time he has to separate from his mother. Father deserted mother and two little sons four years before. Father has been extremely brutal to both mother and Nicky. The older boy had escaped the full impact of father's brutality by staying much of the time with his grandparents. At the

time Nicky was brought to us, he cried and fought for one solid hour when he was forcibly separated from his mother. The scene of separation was revealing: the mother spoke pleading words to him, explaining in babyish terms why he should go with the doctor, and at the same time her left arm drew him close to her. The tone of her voice contained both irritation and gratitude at this show of loyalty to her. This mother, in her fear and despair, had turned all her attention onto this child. She was so in need of his devotion, such significance it gave her, such consolation for the wounds inflicted by the child's father that she was unable to force him to separate because of her own internal conflict.

Sudden, intense phobias such as school phobias or phobias for place or objects usually are related to anxiety and despair in the parent which may be interpreted as anger and rejection by the child. There is a kind of contagion of emotion from parent to child and child to parent. The mother's despair and anxiety the child interprets as dissatisfaction with him. He becomes anxious and he knows no solution. Mother sees his anxiety and in turn becomes sympathetic, frightened, irritated, guilty, and more anxious. The child sees this as dreadful rejection and he panics. His panic immobilizes mother and she can take no firm meaningful stand with him. The anxiety of the two persons binds them together.

In the above cases I have selected the strongest lines in the interpersonal patterns, and in so doing I have simplified them; however, as was stated earlier, the causes in any one case are almost always multiple, and it takes all of the important factors within an individual's life and in the precipitating situation to account for the final symptom complex.

Seeing that the emotional problems described were caused by a number of important factors involving the child's temperament, his intelligence, his basic personality patterns, and the current stresses, can one justifiably ask: "What is *the* cause and what is the exact treatment for stealing, setting fires, temper tantrums, sexual misbehavior, enuresis, tics, hysteria, phobias, headaches, excessive timidity?" No, one must be prepared to look









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for a net-work of causes, one must first diagnose the personality of the child and the nature of his human relationships before treatment can be designed and carried out. And more often than not, the key figures who make up the child's world are in need of treatment as much as the child. It is obvious that this kind of diagnosis and treatment requires much time and the same kind of painstaking care that goes into the making of complicated precision machinery or the creation of a work of art. It is also obvious that illnesses involving patterns of personality and patterns of interpersonal stress do not lend themselves to a simple system of diagnostic labels. Psychiatry does not have the specificity of cause-disease-

treatment attained by the rest of medicine — yet, at this stage of its development, there is still room for the innovator, and for the man who is as interested in the whole person underlying the illness as in the illness itself.

Case histories were presented which illustrated different temperaments, personality formations, interpersonal patterns, and the stresses which are a natural outcome of their interaction. The emphasis was more on the diagnosis of the stressful interpersonal patterns than on the particular symptom produced. It follows from this emphasis that treatment should be focused upon the child and his relationships and not upon his symptoms.



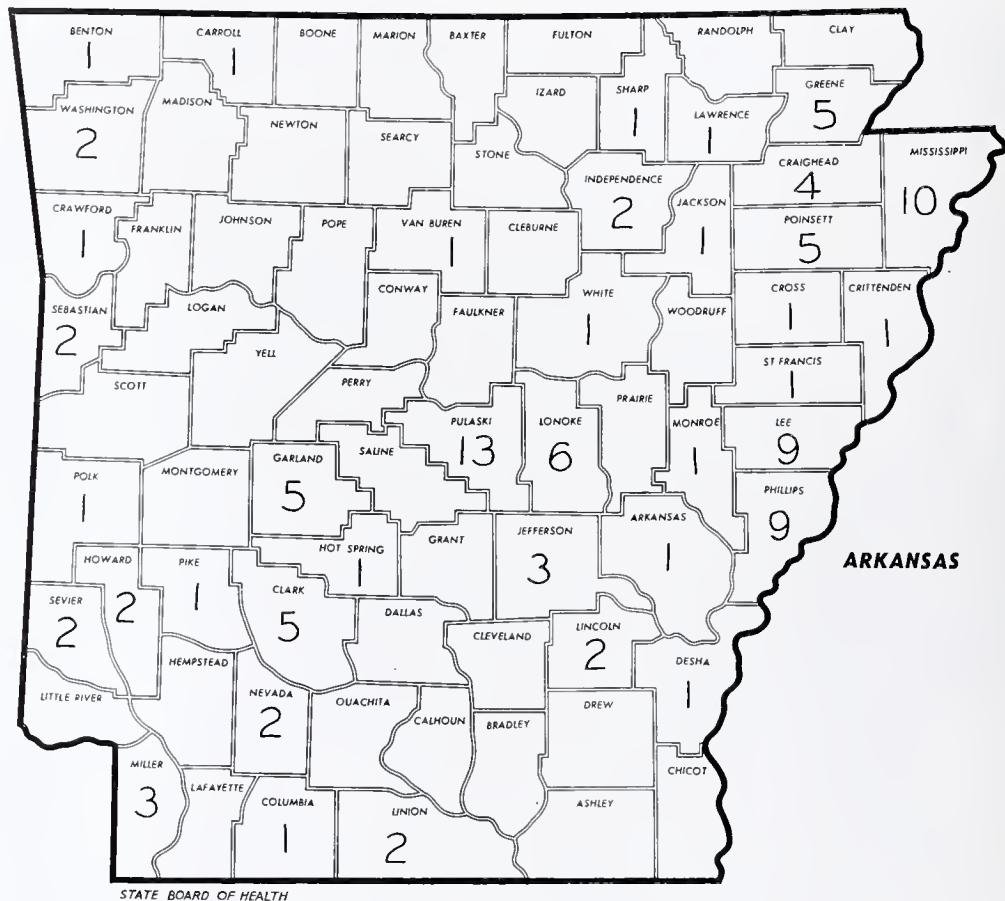
# What Is Your Diagnosis?



FOR ANSWER SEE PAGE 297

# Arkansas Public Health at a Glance

## DEATHS RESULTING FROM FIRE AND EXPLOSION OF COMBUSTIBLE MATERIAL ARKANSAS - 1957



TOTAL - 111

In Arkansas, as in the rest of the country, accidents take the lives of more of our young people (ages 1 to 33) than any disease. In 1957, almost ten percent of all accidental deaths in Arkansas resulted from burns caused by fire or explosion of combustible materials. Of the 114 deaths from this cause, 101 resulted from fires and explosions in homes. Many of these involved the misuse of various forms of petroleum products.

With the approach of our coldest winter months, the number of fires and resultant deaths and injuries will start to increase. As indicated by the map, a relatively large number of Arkansas' fatal fires occur in the heavily populated rural

eastern counties where many families do not have access to natural gas for central heating and must rely on wood or coal burning space heaters. Many of these space heaters are make-shift appliances or are improperly installed and maintained. In order to speed ignition of the fuel, a petroleum product, usually kerosene, is often poured from a storage container onto smoldering coals or kindling. The sudden flare-up or explosion of highly volatile petroleum products is often the beginning of a rapidly burning fire which quickly spreads over the entire structure, trapping the occupants before they can escape.

A majority of the victims of these home fires are children. Many of these chil-

\*Sponsored by Ark. State Board of Health.



## FEATURES

dren die in Arkansas each year as a result of burning clothing which catches fire from unprotected heaters of all types.

Upon investigation, it was found that some individuals and families have experienced costly, if not fatal, home fires and then at a later time have repeated the same actions which resulted in the earlier losses. Some families have a history of several home fires.

In order to plan a practical, effective public education program for the prevention of these disasters, it is necessary that something be known about the people responsible for creating conditions which result in home fires. Something should be known about their homes and the heating and cooking equipment used in them.

The socio-economic level, educational level, attitudes and habits are important in determining what preventive measures will be most effective.

Since February, 1958, an epidemiologic investigator has been investigating all re-

ported fires in Mississippi County. This study, sponsored jointly by the Arkansas State Board of Health, the U. S. Public Health Service, and the Mississippi County Health Unit, will continue through June, 1959.

By interviewing the survivors of home fires, or acquaintances of families, in which there are no survivors, the investigator is attempting to learn something about the behavior of the persons involved and the other contributing factors which resulted in disaster.

No conclusions can be drawn from this study at this time. The results will be published at the end of the investigations.

Meantime, physicians can contribute to the prevention of home fires by cautioning their patients to be sure that heating and cooking equipment is properly installed and maintained and that it is used according to manufacturers' instructions.

Deaths and injuries from home fires *can* be prevented!

## Osteopathy is Not Best for the Public

ALFRED KAHN, JR., M.D.

With the next session of the Arkansas Legislature approaching, the members of this medical society should prepare to counter the efforts of the osteopaths to obtain wider privileges and licensing in this state. The Committee on Medical Legislation urges all members of the society to contact their legislators and acquaint them with the necessity for rigidly limiting osteopathy.

In a previous editorial in this Journal, it was pointed out that organized medicine is not opposed to osteopathy as a rival organization. It is against osteopathy because it is not in the best interest of the public. There should be only one standard of medical care: the well trained physician. The extension of manipulative medicine practiced by osteopaths does not permit appropriate diagnostic or therapeutic methods. It is perfectly obvious that the canons of medical ethics do not try and limit the experimental investigation and later use of proved methods of diagnosis and treatment. Physicians would gladly use manipulative therapy if it could be shown to be of value. We raise the question, if osteopathy has benefit to offer the public why does it not produce scientific proof of its value. One of the essential differences between medicine and osteopathy is the former's willingness to critically evaluate methods of diagnosis and treatment, and a complete willingness to discard unproved medicines and methods. If manipulation would cure, physicians would use it. It just is not fair to the public to use less than the best means of therapy.

The osteopaths state there is a doctor shortage but as pointed out by the Committee on Medical Legislation every county in Arkansas has at least one licensed physician. Sixty-five per cent of these physicians are under 45 years. Actually, the number of physicians in Arkansas has increased from 1,335 with a state population of 1,912,000 in 1950 to 1,540 with a population of only 1,779,000 in 1958. This Committee reports that Arkansas' death rate is lower than the national average and in some measure this is attributable to medical care; there is a tendency to higher death rates in states with large numbers of osteopaths. Lastly, this Committee cites the fact that there are fewer licensed physicians now than 50 years ago and yet the life expectancy is greatly increased, proving quality of practice is much more important than the number of practitioners.

Of considerable importance is the fact that hospitals which permit osteopathy to be practiced cannot be accredited by the Joint Commission on Accreditation of Hospitals. Arkansas has 12,716 hospital beds and the use of these by osteopaths might seriously injure the clinic or hospital's professional standing.

Every member of the Arkansas Medical Society should support the Committee on Medical Legislation by contacting their respective legislators and acquainting them with the danger of enlarging the scope of osteopathy. The spread of osteopathy will result in lower standards of health in this state; the Medical Society opposes this as not being in the best interest of the public.



## Medicine in the News

### Survey Shows Radiation in most Foods Not 'Significantly High'

A two-year survey of a variety of samples of foods produced since 1945, when atomic and hydrogen bombing and testing began, shows most of them do not carry "significant burdens of radioactivity." Certain seafoods, dairy products and tea were exceptions, but even with them there is no danger as commonly consumed. Ratings were made by comparing the foods with similar samples produced prior to 1945. The assumption was that the level of "natural" radiation would be the same before and after 1945, when "man-made" radiation started appearing in the form of fallout.

### Hospital-Physicians-Insurance Committee Organized

Mr. R. B. Donovan and Doctor Harvey Renger representing the Texas HIP committee met with the Arkansas HIP committee September 21, 1958, to assist and advise our newly organized Arkansas committee in basic operations and organization. The Texas committee is now seven years old and being the only other HIP in existence came to us as a very helpful adviser. Briefly the purpose of this committee is explained in the name, Hospital-Insurance-Physicians Committee.

This committee is to help continue the good relations between the three groups and to recommend action on matters which might adversely affect any member of the group.

### Plan Drawn Up for Action Next Year On Keogh Legislation

A plan of action to obtain passage next year of the Keogh bill has been approved by the executive committee of the American Thrift Assembly and presented to the assembly's board. ATA already is at work contacting candidates for Senate and House.

ATA was formed by a number of professional groups interested in the legislation, including the AMA. The bill would

allow the self-employed to defer income taxes on a certain percentage of their earnings if placed in retirement plans.

The blueprint for operations next year was drawn up by a special committee appointed by ATA's executive committee. Active in the work were Dr. William J. Kennard, representing the AMA; Milton F. Lunch, National Society of Professional Engineers; Donald E. Channell, American Bar Association; Lyman Bryan, American Institute of Certified Public Accountants; and Al Payne, National Association of Real Estate Boards.

### Only \$4 Million Remains of Research Facilities Grant Fund

With award by Public Health Service of 98 grants worth \$13 million, only about \$4 million now remains of this fiscal year's \$30 million fund. The first \$13 million was awarded in August. Awards are made on recommendation of the National Advisory Council on Health Research Facilities, which in September approved the grants just awarded.

### Forand Bill Among Labor's Major Objective for Next Session

A pamphlet just issued by the AFL-CIO confirms that labor's national leadership is moving the Forand bill high up on its priority list of bills it wants passed in the next session of Congress. The booklet, "Labor Looks at the 85th Congress", is mainly a review of the last two years, but it also looks ahead. It locates the Forand bill as fourth of 17 legislative objectives next year, declaring that labor will work for enactment, "through the social security system," of a program of "hospital, nursing home and surgical care for those receiving benefits." The booklet was prepared by the AFL-CIO's legislative department, headed by Andrew J. Biemiller, former Democratic Representative from Wisconsin.

Only objectives ranked higher on the list are "complete overhaul of the Taft-Hartley act," legislation to "safeguard unions from racketeers and from improper activities" on the part of both labor and management, and extension of the fair labor standards act and an increase of the minimum wage to \$1.25 per hour.

The Forand bill would provide hospitalization and surgical care for all social security beneficiaries. Last session it was among social security changes on which hearings were held by the House Ways and Means Committee, and was the subject of considerable discussion, but was not included in other provisions reported out by the committee. On the committee's instructions, the Department of Health, Education and Welfare is making a comprehensive study of the financing of medical care for the aged.

### **Washington BS Studying Low-cost Insurance for Aged & Low Income**

The Washington, D. C., area Blue Shield organization, at the request of the District of Columbia Medical Society, is studying the possibility of setting up a separate medical-surgical care plan for low-income groups, **including the aged**, that would provide the regular benefits but at a reduced premium. Dr. Donald Stubbs, Washington BS president and chairman of the national Blue Shield board of directors, said the income cutoff point couldn't be estimated until it was learned how many subscribers would be covered. However, he thinks the maximum family income to qualify would be about \$3,000. Hospitalization would not be covered.

An outline of the proposal has been sent to the six medical societies in the Washington area for their consideration, and Dr. Stubbs says he has heard "nothing unfavorable." At present the Washington Blue Shield has one income cutoff point, \$6,000. Premiums average \$4.94 a month per family and \$1.56 per individual. Because the new low-cost plan is merely in the development stage, no premiums have been decided upon.

Dr. Stubbs said somewhat similar arrangements exist in some other parts of the country, having evolved over the years as higher income groups have been charged higher premiums. Some plans, he explained, have as many as seven separate premium rates, based on income. He is not aware of any other plan that has attempted to handle the problem of insurance for the low income group by arbitrarily setting up a new and lower classification as proposed for Washington.

### **World Medical Association Central Repository for Medical Records**

The World Medical Association has established a Central Repository for medical credentials available to doctors of the world.

During war and national uprisings, medical records are often lost or destroyed. Because of this, many doctors are today unable to utilize their professional skills because of the loss or destruction of their original credentials and a lack of a protective service in which authenticated copies could be deposited. Therefore, The World Medical Association has undertaken a program to assure that the doctor will always be able to prove himself medically trained and fully accredited to practice medicine.

In the United States, the lifetime cost of the service on a one-payment basis to the newly graduated doctor is approximately \$60.00. An actuarial schedule has been established for doctors in the various age groups. A 10-year service rate is also available.

### **Symposium Held**

A discussion of the timely subject, Traffic Injuries and Antibiotics, by several guest panelists was presented November 9, at the Hotel Marion in Little Rock. This was sponsored by the Arkansas Academy of General Practice with the cooperation of the Office of Postgraduate Education, UAMC.

### **NIH Awards \$136 Million In Grants in Year**

The National Institutes of Health awarded 9,534 grants worth \$136 million for research, training and construction to non-federal institutions during the fiscal year ended last June 30. Grants went to 699 institutions including some in 28 foreign countries. More than two-thirds of the money was to support 7,028 research projects and \$30 million was used to help build or expand 177 research facilities. Facilities grants must be matched. A total of \$6.4 million was invested in research fellowships to 2,329 in this country and 84 abroad. In addition, federal money supported 16 foreign scientists working in this country.



### **Proposed Ban on Airmailing of Etiologic Agents to Be Dropped**

In the face of a volume of protests from medical societies, U. S. Public Health Service, the pharmaceutical industry and many other groups, the Post Office Department has abandoned its plan to ban airmail shipment of etiologic disease agents. It was learned that since the question came into the open, the department has received a flood of protests from state medical societies, state departments of health and many other associations and individuals. One PO official said the department had heard from "about every medical society."

### **Appeals for Federal Disability Payments on Increase**

The Social Security Administration reports a sharp rise in volume of appeals from applicants denied social security benefits, mostly under the disability section enacted two years ago. Under this provision, a person determined permanently and totally disabled may start drawing at age 50 the social security payments to which he otherwise would be entitled at age 65.

### **Quesada Heads Aviation Agency; Improved Medical Set Up Sought**

Appointment by President Eisenhower of Elwood R. Quesada as Administrator of the new Federal Aviation Agency, effective November 1, increases prospects for strengthening the position of medicine in Federal aviation activities. It is a recess appointment, subject to approval of the Senate after the session opens in January.

When legislation providing for the new agency was before Congress earlier this year, it had the active support of the American Medical Association. For years the AMA has been concerned with the deteriorating administrative position of medicine in Federal agencies concerned with aviation problems such as examinations and human factors in plane design and operation. It anticipated that in an entirely new government organization, medicine would be given its proper role.

The AMA is proposing Federal Aviation Agency set up an Office of Civil Aviation Medicine to consist of the Offices of Civil Air Surgeon, Regional Flight Surgeons and Civil Aeronautics Medical Research. The chief medical officer would report directly to the Agency's administrator. In making the recommendations, the AMA stated:

"The purpose of these recommendations is to establish a completely adequate civil aviation medical program and to improve safety in air commerce through the development and application of sound medical knowledge and research in civil aviation and include such factors as standards of physical and mental fitness for airmen and methods of medical assessment and certification and medical advice on human requirements in aircraft design and operation."

### **Russian Rehabilitation Efforts Impress SS Admin. Schottland**

Social Security Administrator Charles I. Schottland, back from a one-month tour of Russia, is impressed with the Soviet Union's progress in rehabilitation and care for old people. Based on his own observations and data furnished him by the Russians, Mr. Schottland reports:

1. Russian researchers have prepared separate pamphlets on each disabling disease. Mr. Schottland is having these translated for the information of the medical advisory committee on disability.
2. About a third of old people in Russia institutions are working on a voluntary basis, but for pay. He thinks that perhaps nursing homes and other institutions in this country can make more progress in this direction.
3. Nurseries and old peoples' homes in Russia are "excellently" staffed, with one employee for about every three old persons and one for every two and one half children.

Mr. Schottland says that about two-thirds of the Russian population is covered by social security, paid for entirely by the employers (government runs all large enterprises). He made the point that a comprehensive social security program is almost a necessity for the Russians, inasmuch as under their socialistic state wages are about the only source of

income and when wages stop the people can look only to social security.

### **IRS Won't Rule on Criteria for Clinic Tax Status**

Internal Revenue Service has decided not to make a ruling that would define basic criteria as a guide to group practice clinics in setting up retirement plans for their members. However, IRS announced that it would not discourage clinics from going ahead with plans for such retirement programs. IRS, as well as the AMA's law department, advises clinics to obtain competent legal advice so as to avoid state and local as well as federal difficulties. The advantages of a retirement plan on a tax-deferred basis — which individual physicians are not privileged to set up — must be weighed against the fact the clinics also would be subject to federal corporation taxes of 52 per cent of profit.

### **Sec. Flemming Wants to Shift Some Programs to States**

Secretary Flemming plans next year to ask Congress to shift two grant-in-aid programs, water pollution control and vocational education, to the states. A similar idea was advanced last year, but it brought no reaction in Congress and eventually was dropped.

To help the states pay for the programs, the U. S. would forego 30 per cent of the tax it now collects on telephone service and have the states levy that part of the tax. Last year Secretary Folsom pointed out that this wouldn't return enough revenue to the low-income states to finance the sewage treatment plants and vocational education efforts. To solve this problem, the federal-state joint action committee, of which Mr. Flemming is a member, proposes that the new state tax money be supplemented by outright Federal grants equal to 10 per cent of the total phone tax now collected by the U. S. A per capita income formula would be applied to distribution, so low-income states would receive a higher percentage of this fund.

The two funds would amount to a total of \$145 million annually. Now federal

grants for them total only \$85 million. The Secretary emphasized the great need for water pollution control, and said the intention was not to sacrifice this or vocational education while shifting the work to the states. How far the Flemming proposal will get with Congress is problematic; the change will be certain to be opposed strongly by telephone interests and vocational education people. The latter don't want any chances taken with their well-established programs.

### **WMA Assembly Reaffirms Principles of Medical Care**

The World Medical Association recognizes and supports only those medical care systems provided by Social Security that are approved by the national medical association of the country in which that system operates. In 1948, the Association adopted Twelve Principles to govern Social Security plans that include medical care. Governments and Social Security organizations frequently develop and try to impose medical care plans that violate these Principles and therefore are not acceptable to the medical profession of the country.

### **Violations Reported**

The XIIth General Assembly meeting in Copenhagen, Denmark in August, 1958 received reports on medical care plans developing under Social Security systems in Italy, Japan and Peru to which the national medical association in each of these countries could not subscribe since these plans violated the principles governing:

Free choice of doctor

Freedom to prescribe medication and type of treatment

Professional secrecy

Professional autonomy and liberty

### **Principles Reaffirmed**

The Assembly reaffirmed its firm belief that whenever medical care is provided as part of the Social Security system provisions must be made to provide:

Free choice of doctor by the patient

No intervention of a third party between the doctor and patient

No restriction of medication or mode of treatment by the doctor



That there shall be no exploitation of the doctor, the doctor's services or the public by any person or organization.

The XIIth General Assembly supported the complainant member associations for refusing to accept the plans of medical care services under Social Security plans that violated these, or any other of the Twelve Principles governing medical care.

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## ANNOUNCEMENTS

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### Grant Support for Psychiatric Training

The National Institute of Mental Health has invited the Department of Psychiatry of the University of Arkansas Medical Center to apply for grant support for "psychiatric residency training for physicians in practice who wish to become psychiatrists." Annual stipends of \$10,000 can be provided for qualified applicants. With the activation of the inpatient services for psychiatry and neurology, the Department of Psychiatry has been approved for full residency training in psychiatry. In order to apply for grant support, information is needed concerning possible applicants. Interested Arkansas physicians are invited to communicate with Dr. Wm. G. Reese, Professor and Head, Department of Psychiatry, University of Arkansas School of Medicine.

### The American Congress of Physical Medicine and Rehabilitation

The 37th annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held August 30-September 4, 1959 inclusive, at the Hotel Leamington, Minneapolis.

Scientific and clinical sessions will be given August 31, September 1, 2, 3 and 4. All sessions will be open to members of the medical profession in good standing with the American Medical Association and/or state or county medical association.

### Genetics and Cancer

Topic of Thirteenth Annual Symposium on Fundamental Cancer Research, February 26, 27, and 28, 1959 at The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston, Texas.

For further information regarding the Symposium, please contact the Editorial Office, The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston, Texas.

### The American Medical Education Foundation

The American Medical Education Foundation is opening a drive to support the medical schools of this country. It is a most worthwhile project and should be supported by all physicians. Checks can be sent directly to the medical school of your choice or the American Medical Education Foundation, 535 North Dearborn Street, Chicago 10, Ill.

### New Members —

The Hot Springs-Garland County Medical Society has announced that **Dr. Carl R. Parkerson**, 1421 Central, Hot Springs, was elected to membership October 14th, 1958. Dr. Parkerson was born at Norman, Arkansas, and received his preliminary education at the University of Arkansas at Fayetteville. His M. D. degree was received from the University of Arkansas School of Medicine in Little Rock in 1957. After serving an internship at St. Vincent's Infirmary in Little Rock, Dr. Parkerson entered General Practice at the above mentioned address.

A new member of the Dallas County Medical Society is **Dr. Carroll F. Shukers, II**, of Carthage, Arkansas. Dr. Shukers was born in Baltimore, Maryland and later moved to Little Rock where he attended High School. In 1952 he received a B. S. degree from Ottawa University and was graduated from the University of Arkansas School of Medicine in 1958. Dr. Shukers began the general practice of

medicine in the new Carthage Clinic on October 15th.

The Independence County Medical Society reported a new member in August. He is **Dr. Harold M. Tatum**, who is in general practice at the IZARD County Hospital in Melbourne. A native of Tyronza, Arkansas, Dr. Tatum received a B. S. degree from Ouachita College at Arkadelphia and an M. D. degree from the University of Arkansas School of Medicine in 1955. After interning at Arkansas Baptist Hospital in Little Rock, Dr. Tatum served for two years in the United States Air Force.

The following three physicians were reported as new members of the Pulaski County Medical Society in September:

**Dr. Theodore C. Panos**, Professor and Chairman, Department of Pediatrics at the University of Arkansas School of Medicine. Dr. Panos was born in St. Louis, Missouri, and attended the State University of Iowa, from which he received a B. A. degree in 1938 and an M. D. degree in 1942. Before moving to Little Rock, Dr. Panos was Associate Professor of Pediatrics at the University of Texas School of Medicine at Galveston.

**Dr. Roy A. Brinkley** has been in general practice in North Little Rock since July 1958. A native of Dell, Arkansas, Dr. Brinkley received his preliminary education at Keiser, Arkansas, High School and the Mississippi State College at Starkville, Mississippi. His M. D. degree was received from the University of Arkansas School of Medicine in 1957 and he interned at Arkansas Baptist Hospital in Little Rock. Dr. Brinkley's office address is 108 East 4th Street.

**Dr. George F. Holitik**, who does general practice and surgery, opened an office in July at 2800 South Hayes Street in Little Rock. Dr. Holitik was born in Corpus Christi, Texas, and later moved to Waldron, Arkansas. He received a B. S. degree from the University of Arkansas at Fayetteville in 1953 and an M. D. degree from the University Medical School in Little Rock in 1957. His internship was served at St. Vincent's Infirmary in Little Rock.

## Obituary

Dr. B. W. Duncan, 87, Waldron's oldest practicing physician, died at his home September 19, 1958, following a long illness. He continued his practice at his home for several years in spite of ill health. Born at Popular Creek, Tenn., he was a graduate of the University of Tennessee Medical School in 1896. He practiced in Harvey, Ark., and Parks, Ark., before moving to Waldron in 1927. Dr. Duncan was a member of the First Baptist Church. Survivors include his wife; one son, Rev. Charles Duncan of Bosier City, La.; four grandchildren; and several nieces and nephews.

Dr. Lewis Chesley Barnes, 72, Hamburg, died in the Lake Village Infirmary October 4, 1958. Dr. Barnes had practiced medicine in Ashley County since 1916. He was a native of Kansas and a graduate of the University of Tennessee School of Medicine. He was a member of the Ashley County Medical Society, Southeast Arkansas Medical Society, the Arkansas Medical Society and the American Medical Association. Dr. Barnes was a Methodist and a member of the Masonic Order and a Shriner. Survivors include his wife, Mrs. Winnie E. Barnes; four daughters; two brothers and two sisters.

Dr. Sam Green Daniel, 90, died at his home in Marshall October 1, 1958. Dr. Daniel was born at Sedalia, Mo., and moved to Marshall as a child. He attended Marshall schools and graduated from Louisville School of Medicine. He began his practice of medicine in his hometown in 1892 and retired in 1942. Dr. Daniel was active in civic affairs and in Democratic politics. He was a member of Campbell Masonic Lodge, The American Medical Association and the Arkansas Medical Society. He was founder of the Searcy County Medical Society. Dr. Daniel is survived by his wife, Mrs. Malissa Bratton Daniel; a brother; three sisters; six grandchildren and two great-grandchildren.



## PERSONALS AND NEWS ITEMS

**Dr. H. A. Ted Bailey** attended the American Otorhinologic Society for Plastic Surgery Meeting in Chicago on October 12, 1958. The following week **Dr. Bailey** and **Dr. Raymond Cook** attended the Academy of Ophthalmology and Otolaryngology which was held at the Palmer House Hotel in Chicago.

A Smackover physician, **Dr. C. E. Kennedy**, was elected chief of staff of the Warner Brown Hospital, El Dorado, at a meeting of the staff recently. **Dr. Garland Murphy** was elected vice chief of staff. Other officers elected were **Dr. Paul Henley**, secretary and **Dr. Albert Clowney**, member of the executive committee.

Appreciation night honoring **Dr. J. J. Whittington, III**, of Walnut Ridge and his nurse, **Mrs. Delsie Segraves**, was held recently by the Smithville community. These folks expressed their appreciation of the service rendered them by **Dr. Whittington** and **Mrs. Segraves** in their coming to Smithville each Tuesday.

**Dr. James W. Headstream** participated as a Panel Member on "Bladder Neck Obstruction in Children" at a recent meeting of the American Urological Association.

### *Proceedings of Societies*

The Lee County Medical Society met at the Lee Memorial Hospital Thursday, October 9th, 1958, with 100% attendance and visitors from Forrest City and Elaine to hear **Dr. A. H. Crenshaw** of the Campbell Clinic in Memphis speak on "Fractures of Children in the Upper Extremities."

**Mr. Aubrey D. Gates**, director of the Field Service Division of the American Medical Assn., spoke at the dinner meeting of the Fifth District Medical Society Sept. 30 at Hotel Camden, Camden, Ark.

Wives of members also attended. **Dr. Evan G. Houston** of Magnolia is president of the society. **Dr. L. K. Hundley** also spoke. **Mr. Gates'** subject was "What's Ahead for American Medicine."

An inspirational meeting with leading medical and lay authorities was held in Tyronza on October 2, 1958, and sponsored by the First Councillor District. **Dr. L. H. McDaniel** organized the meeting. The meeting has been widely acclaimed in the press for the large number of interesting and fine discussions presented there.

**Dr. Alton Ochsner**, head of the Ochsner Clinic in New Orleans, addressed the monthly meeting of the Craighead-Poinsett Medical Society in October. His topic was "Stomach Lesions." Other speakers were **Dr. N. E. Rossett** and **Dr. J. E. Alexander**, both of Memphis.

**Dr. Deane Wallace**, Little Rock, presented an interesting talk and film on "The Gynecological Clinic" at the October meeting of the Columbia County Medical Society.

The Arkansas Chapter of the American Academy of General Practice met for its eleventh annual clinical assembly at the Hotel Marion in Little Rock on October 15-16. Papers were presented by the following physicians: **Claude J. Hunt**, Kansas City, Mo.; **Wm. F. Guerriero**, Dallas, Texas; **R. T. Tidrick**, Iowa City, Iowa; **Albert Weinstein**, Nashville, Tenn.; **Daniel V. Jones**, Cincinnati, Ohio; **James T. Wortham**, Robert H. Furman, G. Thos. Jansen and Thos. G. Johnston all of Little Rock. Guest speaker for the luncheon meeting on October 16 was **Dr. Holland T. Jackson**, Fort Worth, Texas, President of the American Academy of General Practice.

About 40 Southeast Arkansas Physicians and their wives met at the Monticello Country Club Monday evening, October 20th, for the semi-annual meeting of the 4th Councillor District Medical Society. **Dr. Elvin Shuffield** of Little Rock led a discussion on "Legislative Problems

## FEATURES

Confronting Medicine." Wives of the physicians enjoyed a discussion of a recent trip to the Belgian Congo, with pictures and souvenirs, by Mrs. Charlotte Williamson of Monticello.

Contributions to the American Medical Education Foundation from Arkansas for the month of September, 1958:

D. J. McCaughey,	\$10.00
Pine Bluff	
Frank Reed,	5.00
Pine Bluff	
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	\$15.00

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## *Woman's Auxiliary*

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The Independence County Medical Society and Auxiliary met at the Marvin Hotel in Batesville, Tuesday, September 16, for a dinner meeting. Hostesses were Mrs. Chaney Taylor, Mrs. C. G. Hinkle and Mrs. Meryl Grasse. Guests were Dr. and Mrs. C. C. Long of Ozark and Dr. and Mrs. W. D. Stewart of Little Rock. Following dinner the auxiliary went to the home of Mrs. Taylor for their meeting. Mrs. W. H. Calaway, president, presided over a business meeting; following this, Mrs. C. C. Long of Ozark, state Safety chairman, spoke on "Safety in the Home."

Thirty members were present for the first fall meeting of Washington County Medical Auxiliary in the home of Mrs. Fount Richardson, Fayetteville. Co-hostesses were Mrs. Loyce Hathcock, Mrs. Coy Kaylor, Mrs. Fred Ogden, and Mrs. Harrison Butler. Special guests were Mrs. Gordon P. Oates of Little Rock, who spoke on "Safeguard Today's Health for Tomorrow," and Mrs. L. A. Whittaker of Fort Smith.

Contributions to the American Medical Education Foundation from the Woman's Auxiliary to the Arkansas Medical Society:

Boone County	\$20.00
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Bowie-Miller County	32.00
Clark County	133.00
Columbia County	20.00
Craighead-Poinsett County	10.00
Franklin County	8.00
Garland County	31.00
Greene-Clay County	10.00
Hempstead County	7.00
Howard-Pike County	5.00
Jefferson County	16.00
Pope-Yell County	5.00
Pulaski County	192.50
Sebastian County	50.00
Sevier-Polk County	26.00
Southeast Arkansas	5.00
Union County	69.00
Washington County	10.00
White County	20.00
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	\$669.50

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## BOOK REVIEWS

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**TEXTBOOK OF PATHOLOGY WITH CLINICAL APPLICATIONS.** Stanley L. Robbins, M.D., W. B. Saunders Company, Philadelphia. London. Pp. 1351. May 8, 1957. \$18.00.

This Textbook of Pathology is well organized. This reviewer regards the wide use of italic and heavy print throughout the book as a distinctly undesirable feature. The use of small print for the insertion of less important material is occasionally justifiable in any textbook or printed article; the widespread use of variation in type style for emphasis by the author makes for unpleasant reading and the tendency to skip passages which do not have such bold type. The photomicrographs are excellent. The pictures of Gross Pathology are equally good. The text gives wide coverage of pathological lesions, and as noted above is excellent except for the unfortunate print style. The text is very well indexed which makes for easy use. This is a good text book with the exception of the print style.—AK

**PRINCIPLES OF UROLOGY:** Meredith F. Campbell, M.D., F.A.C.S., Emeritus Professor of Urology, New York University; Pp. 622; Illustrated; 1957; \$9.50; W. B. Saunders Company, Philadelphia.

Dr. Campbell presents his third book within 10 years on Urology. This newest volume is offered as an introduction and a ready reference to the subject. It omits the exhaustive reference material and varied theories that are found in the author's 3-volume study of Urology, but presents in clearer outline, the diagnostic and therapeutic criteria of the patient in this field of medicine.



The author cautions his reader early that "the patient must be considered as a whole rather than just a lot of bone and tissue surrounding diseased urogenital tract." He warns urologists that they must be complete physicians, to avoid a one sided view and states, "It is the physicians moral duty to obtain a comprehensive, though not necessarily verbose history and to give the patient a thorough physical examination."

In this excellent "Introduction" the author proceeds to a well arranged study of his subject. The work is wisely subdivided as to subject matter and the subjects clearly and concisely presented. Reference to the disease, its diagnostics, its treatment, is easily made by means of an excellent and meticulous table of contents, and ample discussion is found under each heading.

A special section lists the many questions found on State Board Examinations with page reference for their answers. For one about to take the "Board", this text is probably the finest reference work. Dr. Campbell's standing not only carries the stamp of authority, but clarity of his diction and the readability of the volume, all unite to recommend this volume.

It is useful as a ready reference in urology and its clear, large type and format is a credit to its publishers.—FR

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## ANSWER—What Is Your Diagnosis?

### ANATOMY AND DIAGNOSIS

Large Ureterocele With Bifid Renal Collecting Structures on Left

### CLINICAL DATA:

7 yr. old colored male. History of frequent urination with dribbling and occasional bouts of pyuria and dysuria all his life. Has grown well and has no other complaints.

### LAB DATA:

Urinalysis and NPN—normal.

### SURGERY:

The ureterocele, left ureter and upper portion of left kidney were removed.

### PATHOLOGY:

### X-RAY FEATURES:

IVP reveals large bladder filling defect with absence of the superior pole collecting structure on the left. These findings are almost pathognomonic of a ureterocele. Cystoscopic exam revealed a large cyst with ureteral orifice at its apex.

Section of Surgery, Mayo Clinic, Rochester, Minnesota.

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## TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

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### Current Trends in Tuberculosis

*Donald A. Trauger, Division of Social Research, National Tuberculosis Association, August, 1958.*

While tuberculosis death rates in the United States have continued to decrease in the last few years, technical and theoretical advances have led to radically altered ideas about the nature of the tuberculosis control problem.

It is continually more apparent that the tuberculosis problem of tomorrow is the residue of yesterday's problem. Cases developing currently appear to be the results of old infections rather than new. It is now believed that the reservoir of infection is decreasing. In this sense, tuberculosis appears to be under control.

From another viewpoint, the road to eradication of tuberculosis is not clearly marked. Although the new chemotherapy is far superior to treatment of the past, it is increasingly clear that we do not possess a certain and permanent cure for tuberculosis. Furthermore, we do not possess an adequate immunizing agent. One

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● **Where do we stand in tuberculosis control? Death rates are no longer an adequate measure and other data are incomplete but it is evident that in spite of progress much remains to be done.**

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of the glaring omissions from what is needed to eradicate tuberculosis is knowledge of specific ways to eliminate infection, or to eliminate the consequences of infection.

Our control programs contain substantial loop-holes and are subject to new threats. During 1956, at least 3,000 persons died of tuberculosis who had not previously been reported to the health department. Each day, new X-ray evidence suggests that many others have survived a bout of active tuberculosis without public health supervision. There is some tendency to relax our efforts at control and divert our attention and efforts in other directions. Finally, new knowledge of ionizing radiation has ended the era in which these rays

could be used without regard to their possible consequences. It is now necessary to ask in each instance, "Are the risks of omitting a chest X-ray of this person greater than the risks of giving it?" If the person reacts to tuberculin it would seem the answer is affirmative.

#### *Current Situation*

What is the present situation and what are the current trends? It is significant that the death rate from tuberculosis is no longer regarded as an adequate measure of the extent of the tuberculosis problem. In 1900 the death rate was 194 per 100,000 population. In 1956 the tuberculosis death rate had dropped to 8.4 per 100,000 and the average age of persons dying of tuberculosis was increased to 58.4. The decline in case rates has not paralleled the decline in death rates. When only new active cases are considered, the rate is about five times the death rate. In 1956, 68,866 cases were reported as active or probably active. Precise data are not available but the changing relationship of cases to deaths suggests that a disease which once killed half the people it attacked, now kills only one out of five.

It is currently estimated that there are about 250,000 active cases of tuberculosis in the United States and that 100,000 of these are unknown to health officials and presumably not receiving medical attention. Of the 150,000 known cases, probably more are receiving effective treatment than ever before. While there have been substantial drops in the occupancy of beds in tuberculosis hospitals, the number of people receiving some period of hospitalization is probably greater than ever. There is little question that the number of patients receiving treatment as out-patients is on the increase. Unfortunately, there is little question that some cases are receiving little or no medical supervision. One study of active patients outside hospitals in 1955 showed that half of them had had no examination of sputum within six months of the study. At the same time, and often in the same areas, there is concern for enactment of new legislation and the provision of new facilities for the forcible detention and isolation of tuberculous persons who refuse to take appropriate steps to prevent spread of their infection to others.

Tuberculosis is still a costly disease. It

has been estimated that the total cost for 1956 was in excess of \$725,000,000. The bulk of the money is for hospitalization and rehabilitation and for compensation. Hidden costs such as lost earnings are not included.

#### *Treatment*

Data on the adequacy of treatment are not available, but a recent report of the situation five years after beginning treatment of a group of cases with modern therapy is significant. Twenty per cent of the original group were dead and about two-thirds of these died of tuberculosis. Of those alive, one-fifth still had active tuberculosis. Treatment in the complete sense is still not available to many patients. Rehabilitation services are not readily available in some places and in some other instances available services are not designed to meet the needs of tuberculosis patients of today.

In the field of case finding, accurate data are not available, but screening X-rays of apparently healthy people occur at the level of 20 million a year. In addition, a considerable number of children are tuberculin tested annually. Few areas publish data on the extent of their search for tuberculosis among contacts of persons with tuberculosis, known or suspected. It is believed that the performance is spotty and in certain areas the responsibility for the performance of these functions has not been accepted as a tax-supported public health responsibility.

The fate of the presently infected population is one of the greatest enigmas in tuberculosis. How many will develop tuberculosis, how do we know who they are and what can we do to prevent the development of disease? There is hope, but no certainty that research and experimentation will provide a vaccine that produces more than natural immunity or that an effective prophylaxis can be developed to prevent progression of existing infections. Possibly, other non-specific factors may develop or continue to increase host-resistance. Unless one or more of these possibilities actually develops, experience of the past few years suggests that the tuberculosis already seeded in millions of our friends and neighbors will ripen into clinically recognizable and communicable tuberculosis at rates which twenty years hence will still be at least half as great as the present rate.



# The JOURNAL

## OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

JANUARY, 1959

Number 8

## The Use of Gamma Globulin in Infectious Disease

VIDA H. GORDON, M.D.\*

Judging by a review of the literature on this subject for the last five years, gamma globulin is a favorite remedy for the treatment of many infectious diseases both viral and bacterial, whenever other agents or drugs are unsuccessful. Perhaps before discussing this topic in detail we should define what gamma globulin is. The types of distributions of serum protein fractions play a great part in defense against infection. The protein components are albumin and globulin with the globulin fraction of the serum being divided into Alpha one, Alpha two, Beta and Gamma fractions. Of these, all but the gamma globulin are formed in the liver. Gamma globulin is formed in the reticuloendothelial system outside the liver either in plasma cells or lymphocytes or both. Although the albumin, Alpha and Beta globulin are related in some way to bacterial resistance, it is in the Gamma fraction that antibodies are found. Gamma globulin then is the concentrate of the antibody carrying fraction of human serum. Obviously then, the antibody titre of this fraction for specific diseases will be higher in a concentrate of human serum from a person convalescing from a given disease, than in a concentrate of pooled human serum. It is important therefore in any discussion of the use of gamma globulin to specify which type we are referring to.

For the purposes of this discussion the infectious diseases will be divided into those caused by viruses and those caused by bacteria. There is so much variation in the real efficacy of gamma globulin in the treatment of virus diseases that it is well to further subdivide this group into first, those diseases where the use of gamma globulin in treatment is of unquestioned value; secondly, those where the evidence for its effectiveness in treatment is equivocal; and thirdly, those diseases which are apparently not influenced in any way by the use of gamma globulin.

Of most concern to us as pediatricians is the first group in which gamma globulin plays an important part in treatment both prophylactic and curative.

All of us I am sure have had a world of experience this year with the use of gamma globulin in the prevention and modification of measles. Janeway (18) in 1944 demonstrated the possibility of modification or protection from measles as objectives obtainable through the selected use of gamma globulin. In 1945 the Baltimore City Health Department made available for the first time to practicing physicians gamma globulin for family contacts aged six months to three years who had been exposed to measles. In children under 12 months one should attempt complete prevention by passive immunization by giving 0.25cc/kg intramuscularly before the 6th day after exposure. In all other children one should attempt to modify the disease by partially protecting with immune serum globulin using

\*Associate Clinical Professor of Pediatrics, Arkansas School of Medicine, and Practicing Pediatrician.

\*\*Presented at the Pediatric Symposium, annual session of the Arkansas Medical Society, Hot Springs, Arkansas, May, 1958.

0.05cc/kg intramuscularly on or before the 6th day of exposure. Ordinarily we do not use it after the child has developed the disease.

Infectious hepatitis is another virus disease, the spread of which can be prevented by human gamma globulin (from normal pooled adult serum). Infectious (epidemic) hepatitis must not be confused with Serum hepatitis which is artificially transmitted by administration of plasma or blood. In an epidemic of infectious hepatitis, those who have not had the disease can be passively immunized with 0.02 to 0.04cc of gamma globulin/kg of body weight by the intramuscular route. This should be repeated at intervals of 6 weeks if exposure continues. Ansfield (2) of Glidden, Wisconsin treated, in 1956, 42 cases of infectious hepatitis with 6cc of gamma globulin injected as soon as the clinical diagnosis was made and 39 of these responded rapidly and effectively with an apparently complete cure in seven days. Two children required a repeat injection a week later. In spite of this report the use of gamma globulin in the actual treatment of the disease has not been generally accepted.

Before the advent of a satisfactory poliomyelitis vaccine which established active immunity, all of us are familiar with the use of gamma globulin (made from pooled human serum) for production of passive immunity during an epidemic of poliomyelitis. Drs. Hammon, Coriell, Wehrle and Stokes (4) after controlled field studies in Texas, Iowa and Nebraska, concluded that gamma globulin in an average dose of 0.14cc/lb. body weight gave highly significant protection against paralytic poliomyelitis for about four weeks, the greatest protection being provided during the first week after the gamma globulin was given. This protection occurs primarily if given before known or suspected exposure to infection by the poliovirus and is of dubious value when given to household contacts already exposed. Dr. Albert Sabin in commenting on this report recommended that gamma globulin be used only in epidemic areas for age groups at greatest risk of acquiring paralysis and for pregnant women.

Although the involvement of the saliv-

ary glands in mumps is seldom incapacitating every pediatrician is familiar with the fear of the susceptible fathers of his patients with mumps who dread exposure to the disease because of the complication or orchitis and possible subsequent sterility. Gellis, McGuinness and Peters (3) in 1944 at Fort Benning, Georgia demonstrated rather conclusively on about 118 patients that gamma globulin made from convalescent serum was highly effective in preventing mumps complications, especially orchitis, but that if the gamma globulin was made from pooled normal plasma it was of no value. 7.8% of 51 patients treated with gamma globulin made from convalescent serum developed orchitis but 27.4% of 51 controls developed the same complication. The best results are obtained when gamma globulin is given 24 hours or less after the onset of mumps parotitis. 200cc of irradiated unconcentrated convalescent serum can be used or serum from vaccinated donors or 20cc of gamma globulin concentrate obtained from the same sources.

Except under unusual circumstances children should be allowed to develop mumps and gamma globulin from convalescent serum would not be used for care of exposed children.

Although the serious dermal complications of small pox vaccination are rare, they are associated with mortality rates from extremely low in generalized vaccinia, 30-40% in eczema vaccinatum, to 100% in vaccinia gangrenosa. Hyperimmune vaccinal gamma globulin prepared from donors who have been successfully vaccinated 4-8 weeks before donation appears to be of significant value in prevention of these dermal complications and in the care of exposed susceptibles. The children who develop eczema vaccinatum or vaccinia gangrenosa do not necessarily have agammaglobulinemia but rather probably have varying degrees of immunologic paralysis or a dysgammaglobulinemia. Kempe (5) used this material in New Delhi and Madras, India in 1953. In 75 family contacts of small pox cases who received vaccination alone, 8 developed the disease and 3 died. Of 56 similarly exposed and vaccinated after exposure but also given prophylactic doses of hyperim-



mune vaccinal gamma globulin (0.6cc/kg) 2 cases developed, and 1 died.

In 6 infants with eczema accidentally exposed to vaccinia 0.6cc/kg of hyperimmune vaccinal gamma globulin was given, and none developed eczema vaccinatum.

Barbero, Gray, McNair, Scott and Kempe (20) reported in November 1955 a 6 year old boy with vaccinia gangrenosa which is almost universally fatal. He was treated with hyperimmune vaccinal gamma globulin 7cc I. M. followed by 10cc four days later and 10cc at two week intervals for a total of 47cc. After the fourth dose the lesion was markedly improved and he became the sole survivor of 8 cases reported in the United States for 3 years.

Experimental studies on iridocyclitis produced by Herpes Simplex virus on rabbit's eyes by Howard and Allen (6) suggest that parenteral use of human serum gamma globulin constitutes a rational approach to the difficult therapeutic problem which some cases of herpes simplex infection in the human eye present.

There are some five or six other viral diseases that may be helped by gamma globulin but the evidence available as to its effectiveness is equivocal.

The "Red Book" of the American Academy of Pediatrics 1957 (17) states that "Women in the first trimester of pregnancy should avoid exposure to rubella if by all means possible, but if despite precautions exposure occurs, passive immunization may be attempted with human immune serum globulin (0.25cc/kg body weight) I. M." The Australian investigators used convalescent gamma globulin. The conclusion is that the presence of antibodies and the protective effect are uncertain and unreliable. On the other hand Magath (7) at Mayo Clinic makes the statement in regard to use of gamma globulin in the treatment of a pregnant woman with rubella that "there is no proof that gamma globulin is of any value." He also states that neither ordinary nor convalescent gamma globulin has proved to be consistently effective in the prevention of rubella.

Weintraub (21) reported from Gainesville, Florida a dramatic relief of pain in

four out of six patients within the first 24 hours after treatment of herpes zoster with 10cc of gamma globulin I. M. from pooled human serum every second day until pain ceased and vesicles disappeared. In all cases the inflamed reddened halo on vesicles disappeared after the first injection and complete healing took one to three weeks. All continued their usual activities except ones who had had the disease 12 days and had hemorrhagic skin lesions at the time treatment was started. Although the report sounds convincing, the series of cases is small and further evidence as to the efficacy of gamma globulin in this disease is needed.

Eczema herpeticum was first described in classical fashion by Kaposi in 1887. It is characterized by poorly grouped umbilicated vesicular lesions containing clear serum which occur initially on eczematous skin. The onset is very acute, accompanied by high fever and malaise and the lesions spread all over the body. In 1941 Esser and Soidenberg isolated the virus of herpes simplex from cases of Kaposi's varicelliform eruption. Ruppe, Wilson and Wolins reported in April 1957 (15) a seventeen year old white girl, who had this condition and was treated with 4cc of gamma globulin the first day of hospital admission (5th day of the disease) and 20cc I. M. the 2nd hospital day. Her severe systemic effects subsided promptly within 48 hours after receiving 24cc of gamma globulin intramuscularly secured from the local County Health Department.

In exposed susceptibles to chicken pox, convalescent serum or gamma globulin probably are of no value in prevention of the disease.

Chicken pox, although ordinarily a mild disease, can be serious, particularly in adults, and fatal termination is not rare especially if it is complicated by primary varicella pneumonia. Trimble (10) reported in October 1957 such a death in a 26 year old Filipino intern. He also reported two cases of mild chicken pox in interns who had received gamma globulin after exposure and they received 1cc per 10 pounds of body weight of (polio-myelitis human immune globulin). One developed a mild case of chicken pox 5

days later with only 6 or 7 lesions. He received 15cc of a convalescent serum from blood donors who had had chicken pox within the preceding few weeks. The second patient was a 29 year old adult similarly treated. Trimble reported these two as the mildest he had seen in 11 years experience observing 150 adults with this disease. He felt that the fact that the two mild ones were treated with gamma globulin was more than a coincidence, even though he recognized the need for confirmation of its use in more patients with this disease.

Pityriasis rosea is a feebly infectious disease, the exact cause of which is unknown although Niles and Klumpp and many others feel that there is at least suggestive evidence that it is due to a filtrable virus. Udo Wile succeeded in transmitting this disease to four volunteers. It is a self limiting disease that may extend over 4-6 weeks but it may become both annoying and embarrassing to the patient. Salin, Curtis, and Wheeler (9) reported a series of patients in five different groups, 7 without treatment, 7 with pooled plasma, 7 with pooled gamma globulin, 10 with convalescent plasma and 2 with convalescent globulin. The average untreated case lasted 31 days while cases treated during the first week of the disease with convalescent plasma or gamma globulin averaged 14.7 days.

There is difference of opinion as to the effectiveness of gamma globulin in the treatment of respiratory illness, whether it be viral or bacterial. These are commonly rhinitis, laryngitis, bronchitis, streptococcal and non-streptococcal exudative tonsillitis, pneumonia, influenza, otitis media, sinusitis, conjunctivitis and other undiagnosed fevers. Adams (16) gave half of a group of 70 university students living together and daily together in classes monthly injections of concentrated gamma globulin. The incidence of attacks of acute respiratory disease was reduced 40% in the experimental subjects as compared to the controls and the severity of illness was decreased. One defect in this study it would seem to me was the fact that the controls were not given any kind of a shot.

Abernathy, Strem and Good (14) in a

report to be published soon in the *Journal of Pediatrics* used gamma globulin, 0.6cc/kg body weight up to a maximum of 20cc monthly for six months in one half of 22 patients with severe asthma and gave normal saline to the other half during the same period. This was gamma globulin from pooled human serum. They found no difference in the rate of infection of the two groups, those treated with normal saline and those treated with gamma globulin.

Gamma globulin apparently has no effect on measles encephalitis, coxsackie virus infections, or adeno-virus infections.

In the field of bacterial infections hyperimmune gamma globulin is of unquestioned value in the treatment of non-immunized infants exposed to whooping cough. 20cc of human immune serum is given or 2.5cc of hyperimmune globulin. McGuinnis, Armstrong and Felton (19) recommend that it be used also in the treatment of infants and frail young children with pertussis, giving 2.5cc hyperimmune gamma globulin daily for three days and to older children a dose every other day until three doses are given. Chlortetracycline is used along with this in treatment.

Waisbren (13) and others have used gamma globulin in conjunction with antibiotic therapy in the treatment of osteomyelitis due to staphylococcus aureus and in staphylococcic pneumonia.

It has been used also in pneumococcal arthritis in the shoulder joint of infants treated with penicillin as well, but without improvement on the drug alone.

#### SUMMARY

In discussing the use of gamma globulin in infectious diseases, it has been pointed out that evidence would suggest it is of unquestioned value in prevention and modification of measles, in the prevention of infectious hepatitis in exposed susceptibles, in the prevention of complications of mumps, particularly mumps orchitis, in the serious dermal complications of smallpox vaccination, and during epidemics, in the prevention of paralytic poliomyelitis in children of selected ages most likely to develop paralysis and



in pregnant women if it is given shortly before actual exposure.

Gamma Globulin may help, though the evidence for this is equivocal in the treatment of herpes zoster, prevention of rubella in exposed women in the first trimester of pregnancy, in the attenuation of chicken pox if given to exposed susceptibles and in the treatment of pityriasis rosea and eczema herpeticum.

The evidence for reduction of the frequency of respiratory infections is not clear cut but certainly the well controlled study of Abernathy, Strem and Good, although a small series of patients, would suggest there is none.

Hyperimmune gamma globulin is of unquestioned value in the prophylactic treatment of exposed non-immunized infants with whooping cough and in the treatment of desperately ill infants and frail children with the same disease when used in conjunction with antibiotics.

Its use also has been reported on a small number of patients with staphylococcal and pneumococcal infections that did not respond to antibiotics alone.

There is no evidence that gamma globulin is of any value in the treatment of measles encephalitis (12), coxsackie virus infections or adeno-virus infections.

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# Craniocerebral Injuries

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In the stress and confusion which surround the admission of a patient with a serious head injury to the emergency ward, it is important to put first things first. The airway, if at all compromised, deserves first consideration. A change of position and the use of suction often improve the patient's breathing tremendously. Intubation or early tracheostomy may occasionally be necessary. Tracheostomy can become a quite difficult procedure under unfavorable conditions. It is therefore important to choose the best time for its performance. The control of hemorrhage from the scalp, usually with a pressure dressing, and the treatment of surgical shock are next in importance. It must be remembered that a scalp wound may have hemorrhaged profusely at an earlier time and yet appear quite dry at the time of admission. In treating patients with head injuries, it is often quite important to know as much as possible about the accident and about the patient's earlier state of consciousness. For this reason, witnesses must be interviewed before they disappear from the emergency room area.

Unless profuse hemorrhage has occurred from a scalp wound, surgical shock is unusual in craniocerebral injuries. This absence of blood pressure drop in head injuries is characteristic of mild, moderate and severe brain injuries at the time they are admitted to the hospital. A period of unstable blood pressure, pulse and respiration often occurs within the few minutes immediately following the injury, but vital functions stabilize rapidly if the patient survives the injury. In all instances, the patient with craniocerebral injury should be given a careful general inspection for associated injuries. If the blood pressure is low and the pulse rapid, especial consideration must be given to the possibility of thoracic, abdominal or genito-urinary injury.

If available information permits reasonably accurate reconstruction of the

accident, this may prove helpful. If the stationary head is struck, an acceleration type of injury is produced. If the blow is with an instrument of limited surface, such as a hammer, the skull often gives away locally with a resulting depressed skull fracture and with predominantly local damage to the underlying brain. Acceleration is less because of the fracture, and with lessened acceleration the generalized commotion of the brain is less. When the forward motion of the head is suddenly arrested, the resulting injury is said to be of a deceleration type. Head injuries which result from automobile accidents are generally of a deceleration type. Again it is possible for the deceleration effect on the brain as a whole to be lessened by a focal giving away, evidenced by depressed fracture. Linear fracture is evidence that the skull shape has been altered by force beyond the limits of its elasticity. Although the site of fracture is intimately related to the direction of force, its location does not accurately indicate the site of maximal brain injury. If linear fractures extend from the margins of a depressed fracture, the generalized injury to the brain is usually great. A unique injury results when the stationary head is caught between two compressing objects, like a nut in a nut cracker. If the compressing forces stop in time, extensive fractures may result with minimal brain injury and even without the patient's losing consciousness. Often multiple cranial nerve palsies result from this type of injury.

## THE NEUROLOGICAL EXAMINATION

When a patient is incapable of cooperation, the examination is limited to objective findings. It is more useful to *describe* the state of consciousness than to affix a term such as "comatose." If a patient makes occasional purposeful movements with both sides of the body and stretches out in a comfortable position, brain function is not nearly so impaired as when the extremities are motionless and no effort is made to ward off painful stimuli.

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Any evidence of local injury to the head is noted. The orifices are inspected for drainage of blood or cerebrospinal fluid mixed with blood.<sup>30</sup> The position of the eyes, equality and reaction of the pupils, tone of the facial musculature, spontaneous swallowing and other factors observed give an index as to cranial nerve function. The optic discs can usually be examined. If they are normal, this is valuable for later comparison. Pre-retinal hemorrhage is occasionally present in subarachnoid hemorrhage. Hemorrhagic choking of the optic discs may occur within a few hours of injury, and indicates massive, probably mortal, injury.

If the neck is very sensitive to movement, local injury is likely. Later in the course following injury, neck resistance to flexion usually indicates subarachnoid hemorrhage, but could also indicate meningitis.

Hemiparesis is best determined by watching for spontaneous movements or by provoking extremity movements by applying painful supraorbital pressure, first on one side and then on the other. It is important to watch for facial response also, since paralysis of the corner of the mouth is often the first indication of involvement of the lower end of the motor strip. Response is often somewhat greater in the extremities and face on the side of painful stimulation. Allowance must be made for localized injuries impeding the response of the patient.

In acute paralyzing cerebral injuries the tendon reflexes of the affected extremities may be absent, hyperactive, or equal to those of the other side. Abdominal and cremasteric reflexes will usually be absent on the affected side, and the plantar response is often extensor (positive Babinski sign). An absent plantar response often indicates a more severe degree of neurological involvement than does a positive Babinski sign. Babinski signs are often bilateral even when the brain injury is largely limited to one side.

Cortical or subcortical injury to the central area of the cerebrum typically produces flaccid paralysis. Lesions of the brain stem or massive cerebral lesions

often produce early rigidity with partial or complete paralysis. In typical decerebrate rigidity the lower limbs are held in rigid extension and the upper limbs in internal rotation and extension. Early flexor rigidity is often present in the upper extremities with little difference in meaning, although the term "decerebrate" is then less appropriate. Periods of relative relaxation usually alternate with periods of rigidity, the latter often resulting when the patient is stimulated in any way.

The neurological examination is repeated from hour to hour and day to day in order to know at the earliest possible moment if surgical intervention becomes necessary. If a convulsion occurs, every effort is made to record any focal characteristics evidenced in the onset, in the attack proper, or after the attack as post-convulsive paralysis.

After a patient recovers to the point he can cooperate in a more detailed neurological examination, it is important to determine the presence of anosmia, unilateral blindness, homonymous hemianopsia, unilateral deafness or other defect which may not have been readily apparent in the earlier course.

#### OPEN HEAD INJURIES

Early surgical repair of scalp lacerations and compound fractures of the cranium is desirable when no contraindication exists. Localized injury to the brain with the concomitant dangers of intracerebral hemorrhage and meningeal infection may be a relatively isolated problem or may be combined with even more pressing injuries. Digital examination of cranial wounds with the gloved finger often gives more accurate information than x-ray examination. If it is possible in the surgical repair of the wound to produce a good cosmetic result without violating any basic surgical principles, it is desirable.

Fractures compounded into the ear or accessory air sinuses must receive appropriate antibiotic and sulfa treatment to prevent, if possible, infection of the meninges or brain. An ear which is draining blood and cerebrospinal fluid should be kept clean and be allowed to drain freely.

Depressed fractures which are not compound in nature should be elevated if the depression is of significant degree, especially if near the motor strip of the cerebrum. Bone fragments can often be replaced in the defect, a procedure also permissible in compound fractures if repaired early and satisfactorily converted into clean wounds.

Procaine infiltration anesthesia can often be used in treating open injuries, and is far safer than general anesthesia in most cases.

#### THE SYNDROME OF EXTRADURAL HEMORRHAGE

The syndrome of acute extradural hemorrhage from the middle meningeal artery is of the greatest importance, since early recognition and treatment of this lesion bring complete recovery to a patient who would otherwise die. The syndrome is actually that of unilateral cerebral compression or expansion with beginning herniation of the mesial portion of the temporal lobe into the incisura of the tentorium, against the brain stem. It represents a late stage of intracranial damage with urgent need of intervention.

In acute subdural hematoma, which can produce the same syndrome, intervention is rarely successful in saving life. Occasionally, when intracerebral hematoma is the source of this alarming syndrome, recovery follows appropriate surgical intervention. Acute subdural hematoma or intracerebral hematoma rarely permits a well-defined lucid interval, but even in these critical conditions an element of temporary improvement (relative lucid interval) somewhat increases the possibility of success from surgical intervention.

Typically, extradural hemorrhage results from a blow to the side of the head which produces unconsciousness (and fracture in 95 per cent) with recovery of consciousness within a few minutes. After a variable period (usually 1 to several hours) of more or less complete recovery, symptoms of headache and altered consciousness supervene. Vomiting or convulsions, often Jacksonian in nature, may occur. Hemiparesis may be evident before consciousness is lost. The

lesion is already advanced at the time consciousness is lost. The speed of progression varies tremendously from case to case, and the symptoms and signs may stabilize for several hours or may accelerate abruptly. Interestingly enough, more severe injuries which do not permit a lucid interval, but do result in fracture and in tearing of the middle meningeal artery, rarely produce an extradural hemorrhage of significant size. This is probably due to the fact that with more severe injury swelling of the brain presses the dura mater firmly enough against the vault to prevent stripping of the dura by the arterial bleeding.

The more advanced signs in the syndrome of extradural hemorrhage are homolateral dilatation of the pupil, contralateral hemiplegia, often more evident in the lower face than elsewhere, slowing of the pulse, elevation of the blood pressure and depressed respiration. Hematoma of the scalp or beneath the temporal muscle often gives evidence of the fracture which can usually be demonstrated on the side of the hemorrhage. Neck rigidity is unusual, and temperature elevation occurs only terminally. Decerebrate rigidity and stertorous respiration often precede the terminal drop in blood pressure and acceleration of pulse that usher in death.

#### SUBDURAL HEMATOMA

There is good evidence that in chronic subdural hematoma the bleeding into the subdural space actually accumulates at the time of injury and subsequently enlarges by absorption of fluid as the osmotic pressure increases from decomposition of the blood. The prognosis in acute, massive subdural hematoma, in which surgical intervention is necessitated by grave symptoms within the first 24 hours, is very poor, even when the hematoma is well localized and adequately evacuated. Usually tentorial herniation has already occurred on one or both sides by the time operation can be undertaken. Diffuse brain injury often accompanies acute subdural hematoma. The prognosis for recovery after evacuation of subdural hematoma becomes progressively better when symptoms and signs do not necessitate intervention for several days after



injury. When operation is not required until after the fifth day, the outlook for recovery is good. Most chronic subdural hematomas are operated upon in the first few weeks after injury, but occasionally lesions of unusual chronicity are encountered.

Detection of chronic subdural hematoma in a patient who has sustained a head injury depends upon the change of clinical course to one less favorable, the



Figure 1. The anteroposterior X-ray of the skull of a 77-year-old man is shown at the time of injection of Thorotrast into the left common carotid artery. The left anterior cerebral artery is displaced to the right of the midline and branches of the middle cerebral artery are depressed from the inner table of the skull by massive subdural hematoma of 5 weeks' duration. The hematoma was evacuated with total recovery of the patient.

presence of positive neurological findings or clinical evidence of increased intracranial pressure — headache, slow pulse or papilledema. Spinal puncture is generally contraindicated, but, if performed, may or may not show increased pressure, and will often reveal xanthochromic cerebrospinal fluid with elevation of the total protein. Carotid angiography shows characteristic changes (Figure 1).

#### CONSERVATIVE MEASURES

Competent nursing with good skin care and frequent changes of position is important. Fluid administration should be sufficient and may be regulated according to urinary output. Intravenous administration should be supplanted by a nasal gastric tube as soon as practicable. Oxygen administration by nasal catheter or by tent is usually not necessary after a clear airway is established. When hyperthermia is a factor, adequate mechanical cooling is required, utilizing techniques introduced for production of hypothermia when necessary. Experimental use of hypothermia in critical cases is being tried at certain medical centers, but is not recommended here except to control excessive fever.

Tracheostomy is an extremely useful measure both to establish an adequate airway and to permit direct aspiration of secretions from the bronchial tree.

Antibiotics and sulfa drugs play an important part in the prevention of meningeal infection and in the care of the respiratory tract.

Catheterization of the bladder is not important from the standpoint of bladder distention, since incontinence occurs before retention becomes severe. However, if unconsciousness is prolonged, the use of a Foley catheter eases the nursing problem.

Control of intracranial pressure by the intravenous administration of hypertonic solutions has no place in the routine care of head injuries. If a surgical lesion is suspected, hypertonic solutions may control a critical increase in intracranial pressure until a hematoma can be evacuated. Urea has been used very effectively for the last 2 years in reducing intracranial pressure. A 30 per cent solution in 10 per cent invert sugar (Baxter) is administered intravenously in an amount supplying 1 gram per kilogram of body weight. It is contraindicated when hemorrhage is present except in preparation for a direct surgical attack upon the hemorrhage. It must be remembered that hypertonic solutions reduce volume primarily in areas of the

brain having normal vascularity, not in areas of hemorrhage and contusion.

Diamox has a favorable influence on intracranial pressure when the balance between secretion and absorption of cerebrospinal fluid is disturbed. Some think it has a favorable effect on cerebral edema. It is well tolerated by patients with cerebral injury. When it is thought that blood in the cerebrospinal fluid has unfavorably affected intracranial pressure, Diamox, 250 milligrams 4 times daily, can be administered orally.

Often in the course of a head injury, permission to use a general anesthetic is requested by other services. Unless undue complications might follow postponement of a surgical procedure requiring general anesthesia, the neurosurgeon should be very conservative in granting such permission. Too often a general anesthetic administered immediately after recovery of consciousness following head injury produces prolonged unconsciousness and a clinical picture in itself suggestive of intracranial complication.

#### SPECIAL PROCEDURES

Skull x-rays should be made under careful supervision as soon as the patient's condition permits. Any patient who has been unconscious following injury should have skull x-rays before being dismissed from the emergency room, since complications are more likely to occur in patients who have sustained fracture. Films of good quality may show displacement of the pineal body in unilateral hematoma.

Lumbar puncture is of grave danger to a patient suspected of having a surgi-

cal lesion, especially an extradural hemorrhage. Spinal drainage has some therapeutic value several days after subarachnoid hemorrhage. When injury has produced potential contamination of the meninges, examination of the cerebrospinal fluid is essential in excluding or diagnosing meningitis. It is important that red and white counts be done on grossly bloody fluid, and that smears and culture be made, since the presence of blood may mask evidence of early infection.

Carotid angiography utilizing Hypaque, 50 per cent solution in 8 cc. injections, is of material aid in the diagnosis of extradural, subdural or intracerebral hematoma. Its use would at times require general anesthesia when general anesthesia is contraindicated. Direct attack upon surgical complications without utilizing angiography is frequently indicated.

Electroencephalography is a useful procedure in the diagnosis of complications in craniocerebral injuries. Evidence which it gives can often be integrated with other studies to improve diagnosis.

#### SUMMARY

Alertness to any deterioration in a patient's condition is the keynote in treating craniocerebral injuries. This is accomplished by constant observation and re-examination. Changes in the state of consciousness are of extreme importance and take precedence over other signs. Surgical results are poor if the condition for which they are performed are too far advanced, but are gratifying when the proper steps are promptly taken in appropriate cases.



# Broad Principles of Medical Management in a Disaster

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The management of large numbers of casualties in a mass disaster has received increasing attention in recent years. This topic is of unusual importance to any physician in a community which is located within three hundred miles of a major industrial center. In case of atomic disaster these industrial centers, including the physicians there, will in all likelihood be destroyed. The casualties from the industrial community will be evacuated to the smaller communities located in most cases one hundred miles or more from the site of the disaster. There is, therefore, a reasonable chance that some of the physicians who read this paper may be called upon to treat a substantial number of injured people. Not only will they be called upon to treat such patients, but they may have to do this on their own. In no other branch of medicine will they be quite as alone as near the site of a disaster or upon receiving a large number of seriously injured patients at one time.

At a disaster the physician's responsibility is more than the personal care of a given casualty. If this were his only responsibility, the job would be simple. The physician is responsible for essentially all of the facets that effect all the patient care from the time he sees the patient until the patient is turned over to another physician.

The physician in charge of a disaster situation is responsible for many things. This physician is responsible for the acts and quality of work of the first aid people who work under him. He is responsible for the requisition of all non-medical equipment needed to accomplish his mission. This includes transportation for the medical staff and the wounded, electricity, and protection from the elements. The physician is responsible for the proper and prompt evacuation of the casualty

from the site of injury to his aid station or to a hospital. He is responsible for the efficient maintenance, location, and organization of his aid station or hospital so that the most good can be done for the greatest number of casualties with the material and personnel he has at his disposal.

As in all branches of medicine the physician will have administrative assistance and helpers to do many of these things, but in the final analysis all the factors that effect the outcome of the patient will be his responsibility. The physician can and must, of course, delegate some of these duties; but again, the factors that influence patient care will remain his responsibility even though he had delegated some of the other duties. An awareness of the physician's responsibility is a key-factor in a disaster situation.

Several concepts must be understood for the physician to have an appreciation of medical management in a mass disaster. First, he must understand what the deleterious effects of injury are and how these effects are harmful to an injured person. Second, he must understand what specific measures may be carried out to counteract or reverse these deleterious effects of injury. Third, he must understand by whom and when these specific therapeutic measures may be carried out. For the doctor or first aid man at the disaster to do his job he *must* know what the doctor at the hospital will do next. For the doctor in the hospital to succeed he must know what the doctor or aidman ahead has done. Resuscitation or "revival of the patient" is a team job and each member of that team must have an overall view if he is to do his job well.

What are the deleterious effects of injury? Briefly, four major phenomena threaten life following wounding. The first and most important is that blood is lost and continues to be lost, not only to

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the exterior but into the damaged tissue at the wound or fracture. With blood loss there is progressive decrease in blood volume, fall in cardiac output, fall in blood pressure, decrease in renal blood flow, and decrease in oxygenation of tissue. Second, tissue is damaged. With tissue damage specific organs and systems are damaged, the media for bacterial growth are produced, and the latest laboratory work indicates that toxic products may be released from the damaged tissue and have a general systemic effect which in itself may cause death. Third, the defense against bacteria is broken, wounds become contaminated, and bacterial invasion of the tissues and of the blood stream may occur. Fourth, mechanical defects may develop such as blockage of the airway, hemothorax, pneumothorax, cardiac tamponade, or increase in intracranial pressure.

It must be understood that all of these four processes are progressive, synergistic, and will continue until measures are instituted to slow them down, first aid, and finally correct them, definitive surgery. As long as these processes are in motion the casualty continues to deteriorate. In general the intensity of early therapy and the time lag before the processes are finally brought to a halt determine the outcome of each casualty.

#### RESUSCITATION

It is important to understand that "resuscitation" includes the whole process of slowing down and stopping the pathological processes set in motion by wounding; first by simple local means, second by plasma or blood replacement therapy, and finally by operative intervention at the hospital. First aid given at the disaster and surgery performed in the hospital should be considered integral parts of resuscitation. The location in which resuscitation is carried out depends upon the extent of the disaster, the weather, the efficiency of supply, and the *ability and attitude* of the medical personnel involved. If the mortality is to be kept at a minimum, every effort must be made to make the initial phase of resuscitation prompt, intensive, exact, and thorough. One oversight or break in tech-

nique may well cost a life because of the long time lag involved in evacuation during a disaster.

Optimal resuscitation begins with the physician or aidman at the disaster who attempts to slow down or stop the basic pathological processes that have been set in motion by injury. This is done by initiating the aims of resuscitation which will be discussed in the following paragraphs.

*The prevention of continued blood loss* is achieved through pressure dressings, pressure points, tourniquets, and immobilization of the wounded part. The vast majority of bleeding wounds can be controlled by the application of a pressure dressing. In addition to the pressure dressing the patient may be instructed how to add additional pressure. In most instances bleeding can be controlled by such measures. When a pressure dressing has proven to be inadequate for control of hemorrhage, a tourniquet should be resorted to. (Note the word "resorted," for the necessity of a tourniquet should occur only infrequently.) Immobilization of any portion of the body which has been wounded is a sound principle to observe in order to decrease the chances of recurrent hemorrhage. The splinting of a fracture is of real assistance in preventing any further vascular damage near the fracture site and thereby preventing additional blood loss, both to the exterior and into the damaged muscle. Should an arm or leg be wounded and bleeding recur it is advisable to instruct the patient not to use that extremity until a location has been reached where complete resuscitation is possible.

The replacement of a deficit in blood volume is second only to the control of hemorrhage in saving life. With the new plasma expanders found to be effective in combating shock, the physician has a relatively harmless and inexpensive agent with which to resuscitate the casualty at an earlier time.

Early intravenous therapy is important for several reasons. The patient will be brought out of shock earlier and whatever deleterious effects shock has on the casualty will not operate as long. The condition of the seriously wounded pa-



tient is improved for his journey to the hospital. He is in a less critical condition, and his chances of surviving the evacuation are better. Finally, it is important to recognize that certain type wounds will eventually be accompanied by clinical shock unless intravenous therapy is instituted early. Such injuries as traumatic amputations and large evulsing wounds will eventually require intravenous therapy. Early intravenous therapy in such patients may well prevent clinical shock. Thus, the casualty will benefit from intravenous therapy administered before and throughout the period of evacuation to the aid station or hospital.

*Additional tissue damage can be prevented* by the splinting of fractures and the immobilization of all wounded parts. The proper application of a splint is the single most important factor in preventing additional tissue damage. Inadequate splinting, rough evacuation, or inadequate instructions to the patient concerning the management of himself during the period of evacuation may result in additional tissue damage. The importance of prompt and adequate splinting cannot be over stressed. If a missile should be lodged in a leg and the casualty is allowed to walk, the metallic fragment may well produce additional tissue damage or hemorrhage. Every injured patient should be instructed not to move the injured part for fear of producing additional tissue damage. If the casualty is disoriented, measures should be taken to restrict movement of the wounded part. Should a leg have extensive muscle damage, a splint will do more good than harm.

The correction of defects in cardio-respiratory mechanism should be carried out. At the time the casualty is initially examined an effort should be made to determine whether the patient has signs of respiratory difficulty. If the patient has a sucking chest wound, the wound should be covered immediately with a vaseline dressing. The patient should be examined about the face and neck for wounds. A partial occlusion of the airway can be relieved by manipulating a shattered larynx or by positioning the head in a

particular manner. Instructions to the patient stating how to hold his head or how to lie on the litter may be lifesaving during the period of evacuation. With bleeding around the nose and mouth, the patient should be instructed to lie in a position that will allow the blood to drain to the exterior and not pass into the throat causing aspiration and suffocation.

The physician should be able to relieve much of the pain felt by the casualties. Immobilization of the wound is one of the greatest factors in relieving or preventing pain. This may be accomplished by splinting in the case of suspected or known fractures and by instructions to the patient how to prevent movement of a wounded part during evacuation. Reassurance and explanation to the patient is often beneficial. Many casualties expect pain or in the excitement of a disaster magnify in their own minds the amount of pain they are experiencing. A simple explanation that their wounds do not threaten life or limb and that a small amount of pain can and should be tolerated will quite often give gratifying relief to the casualty.

Morphine may be used to relieve pain. However, a very small per cent of casualties actually have pain severe enough to warrant morphine therapy. Morphine may be deleterious in certain types of casualties. Morphine may cause nausea and vomiting and may increase the hazard of anesthesia. In view of these facts, serious consideration should be made before morphine is administered.

Transportation of the casualty and protection from the elements are important subjects. It is important for all personnel dealing with the injured to realize that exposure to the elements is harmful to the casualty. It is important that an adequate number of blankets (four or five) be available when a casualty is to be transported outside of a heated vehicle during the winter months. It is also important for all members of the medical team to know that the movement of a casualty can be deleterious to a casualty, particularly while a patient is in shock. We should abandon the motto that "the quickest evacuation is the best evacuation" and substitute "the smoothest

evacuation is the best evacuation." This is particularly true after bleeding is controlled, intravenous therapy has been started, and the need for speed is not urgent. It was observed at the Mobile Army Surgical Hospital in Korea that the movement of casualties from the pre-operative ward to the x-ray table, not 50 feet away, would cause some patients to go back into severe shock. In two cases that I know of this move resulted in death. The entire concept of preparing a patient for evacuation and then carrying out a smooth evacuation must be well understood by all members of the team.

Within the aid station or emergency room more aggressive resuscitation by the physician should be carried out. An intravenous cutdown may be instituted to insure uninterrupted intravenous therapy for a critically injured casualty. Thoracentesis may be carried out to relieve a mediastinal shift. Closure of sucking chest wounds, tracheotomy, and blood volume replacement therapy may be carried out at this level.

The physical setup of an aid station or emergency room will vary greatly, depending upon the situation, the time available for construction, the rate of casualty flow, and weather conditions. In general, the site selected for the aid station

or expanded emergency room should give the surgeon adequate room to move freely and quickly from one patient to another. When the casualty load is heavy, it is advantageous to have the aid station divided into areas: A receiving area for sorting, a shock area, a splinting area, and an area for patients awaiting evacuation. When the situation will permit, a house, tent, or school will suffice. On occasion, an open field will afford a satisfactory location.

#### SUMMARY

An important factor in the care of mass casualties is an awareness by the physician that patient responsibility is broad and a key factor in a disaster. The physician is responsible for all factors which alter the eventual outcome of a casualty.

The physician, in accepting his responsibility, must understand the effects of injury. He must know how to reverse the deleterious effects of injury through specific therapy. He must understand that the complete process of reversing these effects is a team job. In addition to knowing his job he must understand the jobs of the other members of that team, if the team is to function at maximum efficiency and mortality is to be kept to a minimum.



# ◆ *What's* NEW ◆

## Thoracic Surgery

BILL D. STEWART, M. D.

Most of the recent advances in the field of thoracic surgery have been in cardiac surgery and surgery of the great vessels. However, since these advances are almost constantly appearing in print, it was the editor's suggestion that this "What's New" be limited to aspects of thoracic surgery other than cardiac surgery. Moreover, it is the author's opinion that recent advances in pulmonary and esophageal surgery have been so varied and so numerous that an attempt to discuss them would also end with a long list of items difficult to adequately cover in a short presentation such as this. Therefore, the recent additions to the armamentarium of the physician in the treatment of a primarily medical disease, which is of vital interest to the thoracic surgeon, will be discussed.

Pulmonary emphysema, although primarily a medical disease is of great interest to the surgeon because of the limitations it often imposes upon him when he plans resectional pulmonary surgery. The complications and end results of emphysema are often surgical problems. Studies in pulmonary function and evaluation of pulmonary reserve in this disease have been stimulated by the surgeon in order to assess more accurately the risk of morbidity and mortality in resectional pulmonary surgery. With the ever increasing proportion of elderly people in our population the incidence of pulmonary emphysema has increased. These people are very prone to pulmonary infections, and in pre-antibiotic days, usually died as a result of bronchopneumonia. However, with antibiotics these infections are commonly controlled and the individual lives on with progressive breathlessness

and finally right heart failure. It is this senior citizen in whom the concurrent development of bronchogenic carcinoma poses the greatest surgical problem. It is for this type of patient that the surgeon calls upon the physiologist for measurements of ventilatory and respiratory functions.

The more recent therapeutic approaches to emphysema (which include: the abstinence from inhaled tobacco smoke, the use of broncho-dilators, the treatment with intermittent positive pressure breathing, the intelligent use of antibiotics, the use of corticosteroids, along with the older therapeutic agent, the expectorant), all seem to recognize broncholitis, either viral or bacterial (with its cellular damage), and the factors of retention of secretions and bronchiolar "spasm" or obstruction as the basic etiologic factors. The "semi-surgical" procedure of pneumoperitoneum appears to be decreasing in popularity as a therapeutic tool.

The use of corticosteroids of the prednisolone type have in many instances afforded dramatic relief to the most severe "respiratory cripple". However, this has led, in some instances, to the use of these potent drugs in many minimal cases of emphysema in which the complications of therapy have more than offset the benefits. This has added one more hazard to surgical therapy — in that the patient with bronchogenic carcinoma and pulmonary emphysema may face a major surgical procedure with adrenal glands not capable of responding to the stress of anesthesia and surgery unless aided by administration of additional steroids.

Of the surgical procedures designed to aid in the treatment of or to treat com-

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plications of emphysema one is especially worthy of discussion under the topic of "What's New". The procedure of tracheal fenestration was described in 1956 by Doctor E. E. Rockey. It is the creation of an opening into the cervical trachea connected to the anterior cutaneous surface of the neck by a skin tube. The outer end of the skin tube is equipped with two valves. The idea for the need of such a procedure was conceived by Doctors Edgar Mayer and Israel Rappaport.

The value of tracheotomy in advanced pulmonary insufficiency has been long recognized and has been used many times in an acute situation. Of course, in this instance, the purpose of tracheotomy is to provide access to the deeper air passages. This affords a method of aspiration of obstructing secretions and serves as a means of creating air currents in the lungs for better ventilation. The tracheal fenestration is performed by suturing the skin margins to the tracheal opening and constructing two flaps of skin by a simple plastic procedure on the skin of the anterior neck. These flaps are so situated as to close the opening when aspiration of the trachea is not being done. This is a permanent opening, and the patient is taught to aspirate mucus or mucopus, as the case may be, from the lower respiratory tract.

Tracheal fenestration is a rather drastic measure — but advanced crippling pulmonary insufficiency from vanishing lung disease is also a drastic disease. The operation is quite new and may not stand

the test of time. It may never develop into a popular means of therapy — however, it would seem to have great merit for properly selected cases. It is not proposed by its originators as the treatment of pulmonary insufficiency — but as an adjunct to treatment. They also point out the advantage of its use for administration of aerosols of broncho-dilators, detergents, and the advantages of intermittent positive pressure administered through an endotracheal tube passed through the fenestration.

The resection of isolated lung cysts resulting from emphysema is an established procedure, and not particularly new. One new addition to the surgical tools for the management of spontaneous pneumothorax complicating emphysema is a plastic needle to avoid lung damage during thoracentesis. The procedure of parietal pleurectomy in the treatment of recurrent pneumothorax (whether due to emphysema or small subpleural blebs) has become well accepted in the recent years and has replaced talc insufflation into the pleural space and other procedures designed to promote pleural symphysis.

In summary, it is difficult to say what is new — when does an individual quit being a baby and become a full member of the family? Only a few procedures have been mentioned, and the procedure of tracheal fenestration is suggested as an innovation to be watched with interest and judgment as to its final place in our therapeutic armamentarium withheld until it is no longer "new".



**A TEACHING SEMINAR**  
**FROM THE**  
**UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE**

## Cystic Fibrosis of the Pancreas

ROBERT S. ELY, M. D.\*

Cystic fibrosis of the pancreas (cystic fibrosis) has become one of the more interesting diseases in modern medicine as a result of recent changes in some of the concepts previously held. These changing concepts apply to frequency of the disease, mechanism of involvement, clinical expression, specific treatment and prognosis. With these changes has come a change in attitude from the previous pessimism to an increasing awareness that the disease can be controlled.

The advances, and essentially all of our knowledge of the disease entity, have come about in 20 years. In this period of time we have come to recognize cystic fibrosis as not merely a disease of the pancreas but a generalized disorder of exocrine glands. Similarly, whereas initially it was thought to be quite rare, it is now considered to occur in 1 per 600-1000 live births. Where previously each recognized case was one of complete involvement we now know there are forms reflecting an incomplete clinical expression of the disease. And whereas formerly a nutritional program constituted our major medical armamentarium, today a vigorous approach designed to control the pulmonary component is our most effective weapon.

### *History:*

The first clinical descriptions of the disease preceded by several years the first report leading to its recognition — a fact which illustrates how the combining of slowly acquired, independent observations permits more adequate understanding of

a disease process. In 1938 the comprehensive report by Anderson (1), of her cases and those available from the literature, catalyzed the first general awareness of the disease in this country. Premortem diagnosis, unknown prior to this time, became more frequent and was further facilitated in the early 1940's when laboratory means of detecting pancreatic enzyme activity were popularized.

In 1944 Farber expanded the concept of Wolbach and Blackfan, concerning inspissated secretions, into the postulation of a generalized defect of all mucus secreting glands (2); this gave rise to the term "mucoviscidosis". Farber felt that the various mucous glands secreted a viscid mucus which was responsible for all subsequent system involvement. The concept attained considerable popularity and has received additional support with the growing realization that pulmonary involvement is the most important feature in determining prognosis.

Although the pulmonary lesion was recognized early, the great frequency of its appearance became respected more slowly and it was not until the late 1940's that attention was given generally to the importance of treating this aspect of the disease. May (3) was particularly influential in swinging the focus of attention away from a nutritional approach, the advocates of which considered the pulmonary lesion to be secondary to a deficiency of Vitamin A, to an approach emphasizing treatment of respiratory infections.

Until 1953 the defect was considered one of mucus secretion with involvement of the pancreas, the respiratory tree and less commonly the liver. At this time di Sant' Agnese and associates (4) demonstrated the abnormally high concentration

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\*The detergent used by us has been Tergemist, supplied by the Abbott Co. with 5 ml of Tergemist, 20 mg/Kg of neomycin or bacitracin are used.

\*\*Mist O<sub>2</sub> Gen Junior "H" Unit, manufactured by the Mist O<sub>2</sub> Gen Company, Oakland, California. The Vaponephrin® and De Vilbiss No. 40 nebulizers have also been recommended.

of sodium and chloride in the sweat of children with cystic fibrosis of the pancreas. This observation did not correlate with the "thick mucus" theory, as the sweat gland has no mucus secreting apparatus. Accordingly the concept has been expanded so that now the disease is considered as a generalized disorder of the exocrine glands (5).

#### *Incidence:*

The incidence of cystic fibrosis follows a historical pattern seen for many diseases, where accumulated clinical experience together with a rising index of suspicion vastly alter the frequency of diagnosis. Initially cases were diagnosed only post mortem. In the following decade the disease was still thought to be rare — but it may be assumed that many infants died of bronchopneumonia or from protracted intestinal steatorrhea, with the basic disorder unrecognized. Today it is no longer looked upon as a rare disease. At the University of Utah we were following about 30 infants and children with cystic fibrosis and at several large centers this number is 200 to 300. Many observers consider the general incidence to be one per 1,000 live births, although the National Foundation for Cystic Fibrosis puts the figure at one per 600 live births.

#### *Heredity:*

Cystic fibrosis is an hereditary disease, generally considered to be transmitted by a simple recessive gene with a carrier rate on the order of 1 out of every 16 to 20 individuals. There is no sex difference. Curiously, it appears to be rare in the Negro and possibly does not occur in oriental people. Siblings of affected children are themselves involved about 25 per cent of the time.

These concepts of genetic transmission, and of disease frequency itself, may need to be revised as a result of the partial or incomplete cases which are being reported. Moreover, studies of sweat electrolyte in family members of affected children have produced evidence suggesting that an abnormal electrolyte concentration may be present more than 25 per cent of the time.

#### *Clinical Manifestations:*

The disease may be considered congenital even though manifestations generally are not seen until weeks or months, and even years, go by. About 10 per cent have difficulty at birth from meconium ileus — a ropy, tenacious meconium causing intestinal obstruction. So far as is known all surviving cases of meconium ileus develop classical cystic fibrosis in later infancy.

The typical clinical picture is well known. The infant or child appears chronically ill with a malnourished, wasted appearance, "pipe stem" extremities, "pot-belly", pallor, cough and "heavy breathing". The stools are foul, frothy or greasy and quite large. Paradoxically, a ravenous appetite is the rule.

However, a number of cases have now been seen where the pulmonary involvement is relatively slight, or the nutritional status is good, where growth has not been retarded demonstrably and where evidences of faulty digestion are not obvious. For these reasons recognition of the disease continues to be dependent upon astute clinical observation and a high index of suspicion as well as upon laboratory aids. The diagnostic criteria include considerations of pancreatic enzyme insufficiency, pulmonary disease and sweat abnormality.

#### *Pancreatic Insufficiency:*

The great majority of patients with cystic fibrosis have a deficiency or absence of pancreatic enzymes in duodenal fluid with a resultant malabsorption syndrome. Usually the evidences emerge in early infancy and with the progression of time the poor nutritional state and failure to grow properly become outstanding. The bowel movements rarely become diarrheal in character and appetite stays voracious until the patient is quite ill. Although utilization of foodstuffs is poor, particularly fatty and "heavy" food but also polysaccharides, there is seldom an intolerance shown.

#### *Pulmonary Disease:*

Sometimes as the presenting feature in early infancy, more often in early childhood, but sooner or later in most of the cases the aspects of pulmonary disease be-



come the predominant clinical problem. Here there is great variation in severity and progression: some children start early with severe pulmonary involvement but progress surprisingly little; others with mild disease proceed inexorably to irreversible pulmonary damage. Usually the pulmonary disease is moderate or severe and tends to progress if not treated. The initial aspects are usually those of "head cold" or "chest cold" occurring more often than with other children. The thick, tenacious mucus secreted is inadequately removed and provides an excellent nidus for staphylococcal infection. As a result bronchopneumonic episodes are soon seen, followed by a more protracted picture of cough, "junky chest", wheezing or continuous "chest cold". In the progressive cases, particularly where antibiotic therapy is not instituted, a more or less constant clinical picture is shown: dyspnea, cough, rales and clubbing of fingers. Coughing spells are characteristic following exercise. The more severe cases go on to bronchiectasis, with cor pulmonale and cyanosis as late manifestations. Although the staphylococcal infection is constant, for some reason the organism behaves in an indolent manner, without great invasive tendencies.

The diagnosis of cystic fibrosis cannot be made conclusively from the roentgen changes alone as these are too nonspecific and too variable among individual patients. It might be pointed out that the radiographic abnormality is not pathognomonic evidence of *irreversible* damage, as there is evidence not infrequently of an improved pulmonary status clinically and radiographically following effective antibiotic and aerosol therapy.

#### *Sweat:*

The concentration of sodium and chloride is elevated two or more fold over that for normal children. This striking observation is seen elsewhere only in patients with adrenal insufficiency from Addison's disease or from panhypopituitarism. There is no increase in the amount of sweat secreted but nonetheless a tendency toward "heat prostration" in warm weather exists for these children because of the salt loss. Despite the sim-

ilarity to Addison's disease, these children have no demonstrable alteration of adrenal function.

#### *Diagnostic Tests:*

There are several tests, outlined in Table 1, which may be used to help establish the diagnosis (6). The *stool trypsin* test is a simple and reliable screening technic, based on the principal that any trypsin present will digest the gelatin coating of unexposed x-ray film and pro-

Table 1. Diagnostic Tests in Cystic Fibrosis

1. Stool Trypsin
2. Lipoidal Absorption
3. Vitamin A Tolerance
4. Hand-Agar Plate (Sweat Chloride)
5. Sweat Electrolyte
6. Duodenal Fluid Analysis

duce a clear area. In cystic fibrosis the film remains opaque. Because bacterial enzymes are capable of the same digestive action, stool dilutions of 1:50 or more are used. If three negative tests are gotten, chances are excellent that trypsin is absent. Unfortunately, as occasional false positive and negative tests are seen, particularly in infancy, the test is not recommended as a confirmatory procedure.

*Lipoidal Absorption* and *Vitamin A Tolerance* tests are based on the ability of the gut to absorb fat and are tests of pancreatic lipase. The Vitamin A test is generally not practical as it requires serial blood samples and is not an easy determination to perform. In the lipoidal test the iodine-containing oil is given orally; after absorption the iodine is liberated and excreted in the urine where it is readily detected by addition of starch solution. In cystic fibrosis essentially no iodine will be found in the urine. Usually an 18 hour urine specimen is used, serial dilutions made and the blue color reaction in 1:4 urine dilution or greater is considered normal.

The *Hand-Agar Plate* test (7) has recently been popularized and is indeed a rapid screening test. Upon an ordinary petri dish, containing silver nitrate-agar, the clean palm is pressed and immedi-

ate precipitation of silver chloride occurs. With normal amounts of sweat chloride only a faint outline is seen; this becomes more definite the greater the chloride concentration. The hand must be well washed to remove any accumulated salts. Unfortunately, in our experience this promising test has been too unpredictable to be used with reliance.

The two vital laboratory tests for accurate diagnosis are the collection of sweat for electrolyte determination and the collection of duodenal fluid for enzyme determination. *Sweat* may be collected either by use of a plastic bag (8), or by use of a gauze square from which the salt is then eluted (6). Thermal and humidity aids are used to accelerate the formation of sweat. Normal values for sodium and chloride run up to 50 mEq/L (somewhat higher with the gauze elution technic) whereas in cystic fibrosis the range is 60-200 mEq/L. The sweat test has become of tremendous value in diagnosing cystic fibrosis as it is highly specific. Care must be taken to cleanse the skin beforehand.

*Duodenal aspiration* sometimes turns into a challenging procedure. The subject is kept in a fasting state and intubated with a polyvinyl tube, or a double-lumen tube to avoid gastric fluid contamination. When duodenal fluid appears (Clear yellow, alkaline or neutral pH) the position of the tube is checked by fluoroscopy. The samples are collected in an ice bath. If viscosity is to be run the procedure should be performed promptly; the viscosity is generally several times that of normal fluid. There usually is no trypsin or lipase activity present. The amylase determination is of less value as this enzyme frequently is absent or low in young infants normally, and conversely, is not infrequently present in older infants or children with cystic fibrosis.

#### *Treatment:*

The present day management (Table 2) of children with cystic fibrosis represents a marked change from the regimen used 10 or 15 years ago. A sound *nutritional program* is still important but no longer constitutes the major therapeutic weapon.

Table 2. Treatment of Cystic Fibrosis

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I. Nutritional
1. Diet—High Protein
—Simpler Carbohydrates
—No Rigid Fat Restriction
2. Aqueous Vitamins—3 times normal dose
3. Calcium lactate—1 gram/day
4. Pancreatin: ½—1 tsp. with meals
II. Pulmonary
1. Antibiotics—Continuous
—Therapeutic Dose Orally
—Rotating Program q 3-9 months
2. Postural Drainage
3. Aerosol Inhalation (2 or 3 times daily)
—Mucolytic Agent
—Antibiotics

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A generous diet fairly high in protein, with some emphasis on the simpler carbohydrates, is advocated. Fat need not be restricted rigidly. Aqueous vitamins should be given, about 3 times the usual dose. We have given additionally one gram of calcium lactate per day. In warm weather extra salt may be indicated. The overall value of pancreatic extract is not clear. It does aid absorption of food and will decrease the stool bulk, but it also tends to decrease the appetite. At times it is of considerable value in relieving or diminishing episodes of "stomach ache" which some of these children have. Also it is helpful in cases where rectal prolapse is a problem.

However, the predominating feature in present day therapy comprises those measures designed to control the *pulmonary infection*. If success is seen here the nutritional program will be a minor problem. The aims of this therapy are to reduce infection to a minimum and to remove mucous secretions as effectively as possible. *Postural drainage* at a 45° angle for 30-45 minutes two or three times a day will provide some gravity drainage. In childhood this can be woven into an "upside-down" session in front of the television set. Oral *antibiotic therapy* in therapeutic doses is recommended on a continuous basis, rather than only with bouts of acute respiratory tract infection.



or with exacerbations. This is a controversial issue but the recommendation is made on the philosophy that the presence of viscid mucous secretions, never adequately removed and providing a cultural medium for *Staphylococcus aureus* growth, creates a state of continuous pulmonary pathology — whether its clinical expression is florid in nature or insidious in development. We have employed a variety of antibiotics, generally rotating from one antibiotic to another every 3 to 9 months on the basis of clinical response and culture and sensitivity characteristics. For broad-spectrum antibiotics a dose of 20-30 mg/Kg/day is used. In the face of particularly severe pulmonary disease a larger oral dose or intensive parenteral administration is used. Most often the initially predominant *Staphylococcus aureus* organism becomes mixed with or superseded by *Pseudomonas aeruginosa*.

*Aerosol therapy* is perhaps as important as the oral antibiotic program. With an aerosol approach many agents have been tried in an attempt to produce a mucolytic effect on the tenacious secretions. As yet no genuinely impressive agent has emerged. Despite this, we have had substantial success clinically using an aerosol combination of a detergent and either neomycin or bacitracin\*. Such bactericidal agents may be used with relative safety as little absorption takes place. Other antibiotics such as penicillin and streptomycin may also be used. Aerosol therapy is used two or three times a day, lasting 30-45 minutes each time.

An important aspect of this therapy is the type of nebulizer. Most nebulizers lose much of their effectiveness because the particles are too large in diameter, resulting in precipitation in the oropharynx or the main bronchial tree. We have used an air compressor and a nebulizer\*\* which produces particles 80 per cent of which have a diameter of 3 microns or less. Objective evaluation of chronic pulmonary disease and the response of this disease to therapeutic regimens is a very unsatisfactory matter. Nonetheless, such aerosol therapy appears

to be of considerable value and is recommended for any infant or child having pulmonary involvement.

#### *Prognosis:*

Fifteen years ago the average length of life for an infant or child, once the diagnosis of cystic fibrosis was made, was two years. Rarely did a patient reach the teen-age. Today a considerable number of such children are past the age of twenty, a prolongation chiefly the result of antibiotic therapy. With the wider antibiotic selection now available and with the very recent addition of aerosol therapy it is impossible to evaluate the present prognosis. We now know that the pulmonary component can often be controlled quite effectively, at times to the extent of reversing ostensibly permanent damage. Moreover, in the second decade of life there is a peculiar tendency for the pulmonary disease to improve.

One disadvantage will accrue as a result of this improving program of management: With the increase in life span already present many of these patients have reached adult life and have married. Considering the genetic factors involved, one may only infer that a greater number of tomorrow's children will have the disease — until a method for its prevention is unearthed. Hope for such prevention exists in the intensive research currently proceeding. And of these research endeavors one very important facet is that concerning the nature of mucus and the factors involved in its secretion.

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## CYSTIC FIBROSIS OF THE PANCREAS

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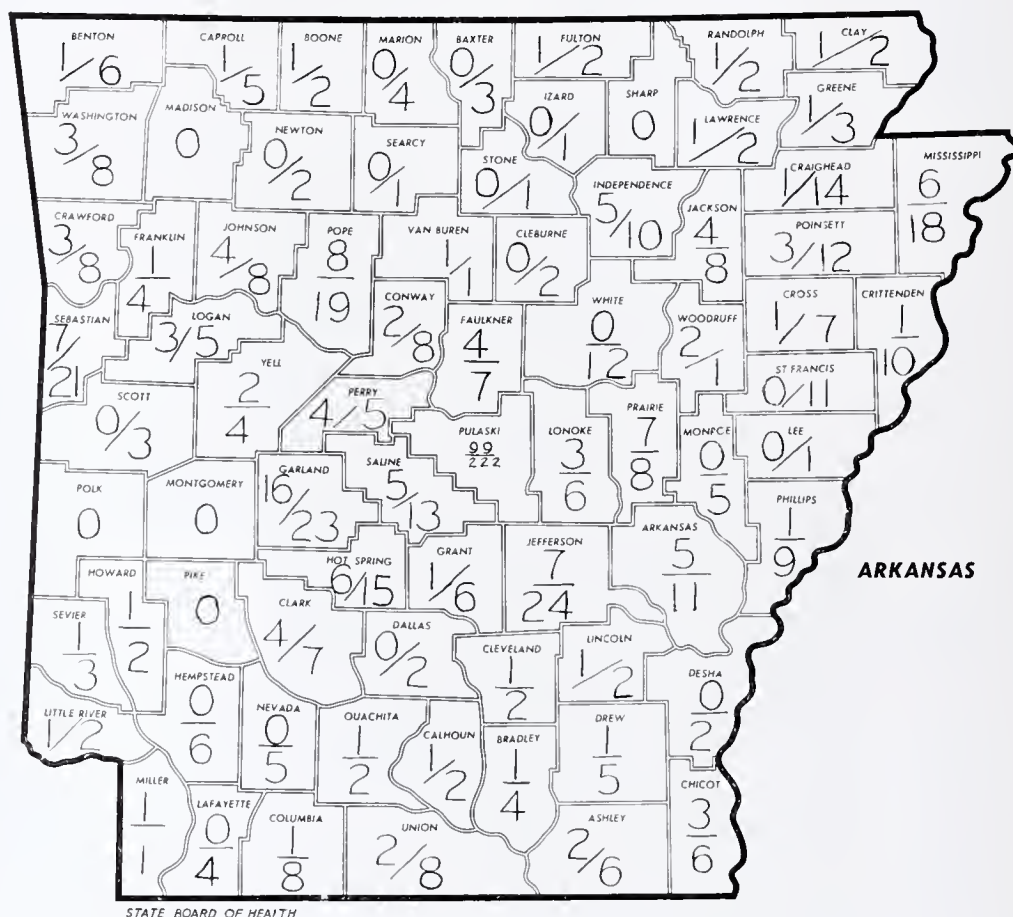
# What Is Your Diagnosis?



FOR ANSWER SEE PAGE 333

# Arkansas Public Health at a Glance

## CHILD DEVELOPMENT CENTER AUG. 1957 - NOV. 1958



TOTALS:  
245 - PATIENTS STAFFED  
667 - APPLICATIONS

In 1956, the Maternal and Child Health Division of the Arkansas State Board of Health received a grant from the U. S. Children's Bureau to set up a diagnostic center for the mentally retarded. This center, the Arkansas Child Development Center, began operation in August, 1957.

The purpose of the Center is to provide medical, social, and psychological evaluation of children suspected of being mentally retarded; to counsel their parents; to assist parents in home training and home care of the retarded child. No medical treatment is given at the Center. If this seems indicated, referral for consid-

eration of this is made to the child's private physician. Reports of the evaluation are sent to the physicians and agencies designated by the parents. All children are seen by appointment only and appointments are scheduled for 2 to 3 months in advance. The Center does not provide overnight care, meals or transportation.

In addition to working with individual cases the Center staff is working to stimulate the growth of facilities and programs for the retarded at the local level by working with parents groups, school systems, and others.

Since August, 1957 approximately 670

From Ark. State Board of Health.



## FEATURES

applications have been received and approximately 239 evaluations have been carried out. The Center's services are available to children all over the state. Referrals are accepted from physicians, public health nurses, parents, and agencies. Initially it was expected that the Center could see all who applied. Since this is not possible, priorities have been defined and not all who apply will be seen. The Center will concentrate most heavily on children under 7 years of age in line with the policy of emphasizing the preschool age child. It is expected that at the present rate of applications, all children under 7 years and a few older ones who present special problems can be seen. Therefore, even though all over 7 years will not be seen, applications for children over 7 are accepted so that those most in need of Center services can be selected.

Because of the large number of applications and the limited staff, it is appar-

ent that it is not possible for the Center to do the Arkansas Children's Colony evaluations as had originally been expected. The Center will continue to work closely with the Colony and with the parents' permission the information in Center records will be made available to the Colony. Potential Colony applicants can continue to make application to the Center first. This information can then be made available to the Colony and will be useful for the Colony evaluations. The Colony staff will work out procedures for the evaluation of their applicants.

The accompanying map shows the location by county of the children already evaluated at the Center. Applications are handled the same regardless of location in the state. Where there is a large discrepancy between applicants from a county and children seen, these applicants are generally either older children or are children currently scheduled for evaluations.

# Editorial

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## The Poison Control Center

### A NEW SERVICE TO THE STATE

BY EDWIN F. MATHIS, M. D.\*

The importance of specific early therapy of poison victims is universally realized. An all too familiar and most frustrating experience is that of attempting to determine the contents of some household substance, which has been taken internally. The rate at which new products are being developed and marketed has added greatly to this problem.

Antidotes for some of the newer and more powerful drugs are sometimes difficult to ascertain. Expert advice, along with toxicological studies have long been needed. Realizing these problems, the Arkansas Academy of Pediatrics and the State Board of Health formulated plans which culminated in the opening of the "Poison Control Center" at the University of Arkansas Medical Center on September 1, 1958.

Verbal bouquets are due Dr. Schuler McKinney of the Academy of Pediatrics and Mr. Orville Kraus of the State Board of Health for their tireless efforts in helping establish this center.

This center is well endowed with information from the national poison control center and adequately staffed with resident personnel. The policies of the center are set by the executive committee. The director of the poison center is Dr. Theodore Panos, who is head of the Department of Pediatrics at the University Medical Center.

This poison control center makes available to every physician in the state a day and night service whereby he can obtain information concerning the contents of thousands of drugs, insecticides, and other toxins. It should be underscored that this is not a treatment center but an information center.

When the local center does not have the desirable information on more obscure drugs, they may quickly communi-

cate with the national clearing house or the local advisory board for their wealth of knowledge.

At this point, let me emphasize that this service is not restricted to pediatrics, but is available to any age group.

We welcome this new organization to the growing medical services in our state. Certainly this center will render invaluable service in a time of need.

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## Accidents and Poisonings in Children

BY B. B. KUMAR, M. D.\*

During 1955, 14,500 children under 15 years of age were killed in accidents in the United States. For each child killed at least 10 children are permanently disabled by accident, and it has been conservatively estimated that for each death there are at least 100 additional children injured in accidents. Under the age of one year the main cause of death continues to be mechanical suffocation. After the first year of life, motor vehicular or traffic accidents become the main cause of death among children. Next in frequency as causes of fatalities comes burns, drownings, falls and poisonings.

Accidents today kill one-third of the children who die each year, instead of one-twentieth of the year's toll in 1900. Over one-half of the childhood accident fatalities occur before the age of five years.

It is reported that about 1,500 children die in the United States every year due to the accidental ingestion of a poison. In a recent survey conducted by the Poison Control Committee of the Illinois Chapter of the American Academy of Pediatrics, the following substances were found to be the most common causes of accidental poisoning in children:

1. Salicylates
2. Sedatives
3. Bleach and Lye

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\*The Children's Clinic, 4601 Woodlawn, Little Rock, Ark.

\*Director, Poison Control Center, University of Arkansas Medical Center, Little Rock, Ark.



## FEATURES

4. Petroleum derivatives and turpentine
5. Pesticides

Four hundred and fifty four cases of accidental chemical poisoning occurred in children under 16 years of age in New York City in 1954. Of the total number, 84 per cent occurred in persons in the age group 0 to 3 years. The high incidence in this age group is related to the child's exploratory nature, coupled with inexperience and lack of caution. Drugs were responsible for 47 per cent of all poisonings, with aspirin as the chief offender and barbiturates as the second leading cause in this category. Bleaches were the chief offenders of the household preparations.

The general practitioner has the following means at his disposal for helping in the accident prevention program.

1. While on home visits point out sources of danger in and about the house and suggest ways of correction.
2. Give careful instructions when prescribing medications, prescribe only enough for the current illness, and avoid the use of candy-coated pills.
3. Analyze the causes of medical emergencies and accidents and use this knowledge for the prevention of similar situations in the future.
4. Give the parents literature on safety in the home.

5. Use an office bulletin board with clippings about childhood accidents to call attention to the accident problem.
6. Present the facts about accidents to the community through radio, television and the local press.
7. Utilize accident case presentation in the hospital grounds to emphasize ways of prevention and treatment.

Recently Poison Control Centers have been organized in different parts of the country, the first one being at Chicago in 1953. These Centers perform a valuable service by being available for first aid calls, aiding in the identification of the active ingredient in the poisonous mixtures, assembling local data on accidental poisoning, publishing warnings, aiding prevention and facilitating research. Recently a similar Poison Control Center has been organized at the University of Arkansas Medical Center. The announcement regarding this Center appears on another page.

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# ANNOUNCEMENTS

## Eighty-Third Annual Session

Arkansas Medical Society

Goldman Hotel

April 12-13-14-15, 1959

The Annual Meeting of the Society will use the Goldman Hotel in Fort Smith as headquarters.

In a departure from previous custom, the Council will meet at 2:00 p. m. Sunday afternoon, April 12th, and the House of Delegates will hold its first meeting at 4:30 the same day.

General Scientific sessions will begin at 9:00 a. m. Monday, April 12th, and continue until noon Tuesday, April 13th. Monday night a party with entertainment will be held at Hardscrabble Country Club.

Specialty Section luncheons will be held Tuesday noon followed in the afternoon by the scientific and business meetings of the sections.

The Annual banquet and installation of the President is scheduled in the Masonic Temple Tuesday evening.

The Council will meet at luncheon on Monday and Tuesday and at 9:00 a.m. on Wednesday.

The House of Delegates will meet Wednesday morning at 10:00 for its final session.

Dr. A. S. Koenig of 922 Lexington Avenue, Fort Smith, is chairman for Scientific Exhibits. Those having exhibits which they wish to display should contact Dr. Koenig as soon as possible for reservations and information as to space available.

The Scientific Program and final details will be printed in later issues of the Journal.

# Medicine in the News

## NIH Studies Impact of U. S. Grants on Medical Schools

To learn how research grants from the Federal government affect medical schools as a whole, the National Institutes of Health is making a survey of 20 representative institutions. Announcement of the study was made by HEW Secretary Flemming in a talk to the Association of Land Grant Colleges, in which he also warned against the danger of Federal influence on education if U. S. grants make up too large a part of the schools' budgets. To learn the impact of grants on the schools, a team of top-flight staff people from NIH is visiting the institutions and sitting down with officials in charge for round-table discussions. Mr. Flemming urged the schools themselves to study how grants are affecting them preparatory to the visit of the U. S. officials.

## Infant Death Rate Shows Increase First Time in 22 Years

The infant death rate in the United States is on the increase. The increase is slight, but it is the first time in 22 years that the percentage of deaths has not shown a decline. The trend, based on Children's Bureau statistics, was disclosed by Under Secretary Bertha S. Adkins of the Department of Health, Education, and Welfare at a convocation of the Children's Aid and Adoption Society of Orange, N. J. Her text was released in Washington.

## Action on Air Pollution Control Promised in Next Congress

One of the problems Congress will wrestle with in the new Congress is the extension and possible expansion of the Air Pollution Control Act, now in its fourth year. Its author, Senator Kuchel (R. Calif.) told the 3-day National Air Pollution Conference called by the Public Health Service, that he would seek enactment of a bill extending the act be-



yond 1960. He did not go into details of expansion, although he pointed out that Congress had voted only \$12 million of the \$25 million authorized over a 5-year period for research and investigation projects into air pollution.

### **Medicare Costs Mounting, Now Running at \$9.2 Million Monthly**

The medicare program is increasing in cost, according to Brig. Gen. Floyd L. Wergeland, head of the Office for Dependents Medical Care. For October, costs rose to \$9.2 million, the highest since the operation began nearly two years ago. It was also the first month of restricted benefits, although the October total includes payments for services rendered some time back. If the present rate of costs continues, it would appear obvious that the \$72 million voted by the last Congress for the civilian phase of the program will be used some months before the end of the fiscal year. For instance, were the October rate to continue for the rest of the fiscal year, the total would amount to around \$106 million. Defense Department could ask the next Congress for a deficiency appropriation.

### **Flemming Cites AMA Joint Effort Against Food Faddism and Quackery**

HEW Secretary Flemming reports a "disturbing increase" in quackery involving false and misleading claims for a variety of vitamins, minerals and other food supplements. Operations in this field have become the most widespread and costly form of medical quackery in the country today, he told a press conference. He quoted an American Medical Association estimate that such operations are costing 10 million Americans over \$500 million a year.

### **Three New Regents Named to National Library of Medicine**

The President has named two doctors to the National Library of Medicine Board of Regents. They are Dr. William B. Bean, professor of medicine and head of the department of internal medicine, State University of Iowa College of Medicine, and Dr. William Stadel, a former

hospital administrator and now director of the San Diego, Calif. Department of Medical Institutions. A third regent is Mrs. Eugenie Mary Davie of New York, chairman of the women's auxiliary of the New York Republican County Committee. The regents elected as their chairman Dr. Champ Lyons, professor of surgery and head of the department of surgery, Medical College of Alabama. Dr. Lyons has been a regent since 1956; this is his last year. He succeeds Dr. I. S. Ravdin whose term has expired. The regents at their first fall meeting also discussed plans for next spring's groundbreaking for the \$7 million new building which is set for completion in 1961.

### **Foreign Medical Graduates' Exam Results Announced**

**Chicago, Nov. 19** — Results of the first world-wide American Medical Qualification Examination held Sept. 23 in 30 U. S. examination centers and 30 foreign centers were announced today by Dr. Dean F. Smiley, executive director, Educational Council for Foreign Medical Graduates.

The foreign centers were established in Latin America, the Far East, the Middle East and Europe.

Statistics reveal that of the 844 foreign-trained physicians taking the examination, 418 passed and will receive the ECFMG Certificate. According to the council, these physicians are certified as possessing medical knowledge reasonably equivalent to that expected of graduates of approved American and Canadian medical schools and as having satisfactory facility in the English language.

The examination results also indicate that 226 candidates came sufficiently close to passing, in spite of language difficulties, to earn temporary certificates which will qualify them to study not more than two years as interns or residents in U. S. hospitals approved for internship or residency training.

Those foreign-trained physicians who pass the exam and enter the U. S. on exchange visitor visas may participate in the National Intern Matching Program or apply directly to a hospital for an internship or residency, Dr. Smiley explained.

### **Forand Proposal Now Third On Labor's Legislative Goals**

The AFL-CIO has given high priority to passage in the next Congress of the Forand proposal for hospitalization and surgical services of OASI beneficiaries. It is now third on a 10-point legislative program. Ahead of it, according to President George Meany, are only aid to depressed areas and federal aid to general education. On the Forand bill, Mr. Meany states: "It is still either impossible or too costly for our senior citizens to obtain such insurance through non-profit or commercial channels."

Legislative goals were outlined at a press conference shortly after the Congressional elections. Mr. Meany observed in a statement: "The American people on November 4 very emphatically indicated that they do not agree with those political leaders who have little faith in the dynamic character of our national economy. By an overwhelming vote, they elected to Congress new Senators and Representatives who want to forge ahead and properly utilize our nation's human and natural resources to build a better world for all. By the same vote, they retired many members of Congress who have followed a stand-still policy."

### **Senate Unit on International Health Ask Aid of Private Medicine**

The Senate Government Operations subcommittee studying international health operations is advocating in its first report increased teamwork of private medicine, allied groups and the pharmaceutical and chemical industries. Comments the report: "It is the hope of men of good will everywhere that more and more the energies of all nations may be channelled to the constructive purpose of furthering the well being of man. In this effort, increased teamwork is essential." It did not spell out details.

### **Two Physicians on National Group For White House Youth Conference**

Two of the 12 members named this week by President Eisenhower to the National Committee for the White House Conference on Children and Youth are physicians. The meeting, set for March,

1960, has been held every 10 years since inaugurated in 1909 by President Theodore Roosevelt. The doctors are Edward D. Greenwood, coordinator of training in child psychiatry, Menninger Foundation, and Daryl P. Harvey, staff physician on the Howard Clinic, Glasgow, Ky. Other members include a newspaper editor, a college president, religious leaders and social welfare executives.

### **Substantial Drop in 10 Diseases Reported by PHS**

Final figures of the National Office of Vital Statistics show substantial reductions in the incidence of 10 diseases during 1957 compared with the previous year. They are brucellosis, diphtheria, encephalitis, hepatitis, malaria, poliomyelitis, psittacosis, trichinosis, tuberculosis and typhoid fever. Polio cases in 1957 amounted to 5,485, the lowest since 1942 when the total was 4,167. Of the 1957 total, 2,499 were paralytic.

NOVS said there was little change in reported incidence of dysentery, rheumatic fever, tetanus, meningococcal infections and venereal diseases. A rise in the number of syphilis cases was noted, from 131,763 in 1956 to 136,039 in 1957. Previously there had been a steady decline.

### **Insurance Company Medical Director Advised on Chest Fluoroscopies**

The medical director of a large life insurance company recently asked the College about routine fluoroscopic examinations of the company's home office employees, as part of an annual physical examination. Crux of the medical director's query was whether this was a wise practice. It was the feeling of the consultant that chest radiology was an inadequate technique as a survey procedure for tuberculosis. He further felt that chest fluoroscopy should be limited to situations in which there was some reason for examining the dynamic activity of the lungs — Excerpted from The American College of Radiology.

### **HEW Secretary Explains Long-Range Health Goals Study**

Secretary Flemming has outlined more specifically his ideas on a long-range



study of the country's health, welfare and education goals and a spelling out of what should be the fair share of the government. The HEW Secretary told a press conference: "I am tired of people pulling figures out of the air on what the federal government ought to do. There is no recognition of state, local and private responsibilities. All have to share."

His plans for a health survey contemplates a group of consultants along the line of the Bayne-Jones Committee which reported last summer on needs and goals in medical research and medical education. He promised full consultation with interested organizations in seeking answers to the following: (1) the time span for achieving goals, (2) how much to be spent each year and (3) extent of spending through grants-in-aid.

### **New Plans for National Library of Medicine**

Public Health Service has submitted preliminary plans for construction of the \$7 million National Library of Medicine to the General Services Administration's Public Buildings Service. The latter must okay all plans for federal construction. Final working plans from the architects, R. B. O'Connor and W. H. Kilham, Jr., of New York City, are due to be ready in December. PHS says the buildings will be of five stories and of 232,000 square feet, with three floors below ground level. Ground will be broken at Bethesda, Md. in the spring, and completion due in 1961, the 125th anniversary of the library's founding.

### **Doctors, Medical Societies Urged To Aid State Motor Officials**

The physician in charge of special health services for the Public Health Service wants state medical societies and private physicians to lend a hand to motor vehicle directors in finding out why 40,000 Americans are killed by autos each year. Dr. A. L. Chapman told the annual meeting of the Association of State and Territorial Health Officers that while medical scientists have been successfully confining malaria and polio, relatively little has been spent in deter-

mining the basic reasons for the high annual highway toll.

"To me this is a challenge which has been inexcusably evaded by the rank and file of the public health and medical professions for several decades. The question now is what are we going to do about it?"

Dr. Chapman suggested: (1) Responsibility for advising state motor vehicle administrators on criteria that can be used to limit driving privileges of those suffering from diseases making them high risk drivers is clearly a medical responsibility. The state health department should bring the medical society and private doctors into the picture.

(2) There is a vast field of study and investigation by medical and paramedical personnel, such as effect of emotions on driving ability, personality pattern of chronic traffic violators and motivations of those who drive in an irresponsible fashion.

(3) Educational programs to get over to the driving public the effects of drugs such as antihistamines on driving ability; the effects of alcohol on reflexes and judgment, and the effect of fatigue on reaction time.

### **IRS Rules on Nursing Home Care for Mentally Retarded**

The Internal Revenue Service has ruled that expenses incurred by a taxpayer for maintaining his mentally retarded son in a home that cares for such cases and was recommended by a physician constitute medical expenses, and are deductible. The patient suffered from brain damage in childhood and at age 13 was so severely disturbed that his doctor concluded it was neither safe nor practical for him to remain with his parents.

### **Mental Health Needs Meeting Hears Pleas for More Federal Aid**

Representatives of national organizations in the mental health field met this week in the third of Secretary Fleming's "listening" conferences. Again through the remarks ran the theme of need for more federal assistance. One conferee, Kenneth Williamson of the

American Hospital Association's Washington Office, commented that when there is talk of "federal leadership" it simply means "federal financing." Dr. Leo Bartemeier representing the American Medical Association, said that mental illness in this country was really an epidemic disease and must therefore have the assistance of the community, not just doctors. The federal government must also lend a hand, he said.

### **Public Campaign for Polio Vaccinations to Resume this Winter**

The Public Health Service has decided to resume the public educational program aimed at getting more people inoculated with the Salk poliomyelitis vaccine. The reason is that the drive of last winter and spring has fallen short of expectations. In the words of Secretary Fleming, "... We have not made nearly the progress we could and should have made during the year — a year in which for the first time there was no shortage of vaccine at any time in any area."

### **PHS Sees Air Pollution As Disease Factor**

Public Health Service, issuing a report in advance of the National Conference on Air Pollution November 18-20, states that it appears likely that the medical effects of air pollution are not confined to the respiratory and circulatory systems. Epidemiological and statistical studies show parallels between air pollution and mortality rates from cancer of the stomach and esophagus, similar to those from lung cancer. PHS also made the point in its report that mortality rates for lung cancer among urban dwellers are significantly higher than among strictly comparable rural groups, smoking habits notwithstanding.

### **Pressure for Aiding Aged in Health Seen by HEW Assistant Secretary**

HEW Assistant Secretary Elliot Richardson sees increased pressure on the government for action on health care of the aged. Addressing the American Public Health Association, the No. 3 man in

HEW warned: "Unless private, voluntary or local solutions to these and similar problems are found, the pressure for action at higher levels of government will continue to mount." Too few communities, he claimed, have adequate facilities for long-term care of the chronically ill and dependent elderly persons, and very few places pay full costs for the hospital care of the indigent, many of whom are aged.

"For these and other reasons, the cost of health care for the aged has become a political problem of great moment," Mr. Richardson declared. "It will not go away. The real issues center around the degree of public action thereby demanded . . . Some would say that far more federal action is needed; others insist that Uncle Sam is already in too deep."

### **Science Foundation Announces Pre and Post-Doctoral Fellowships**

National Science Foundation is now accepting applications for two NSF fellowship programs for advanced study in the natural sciences. One is a pre-doctoral program for which college seniors and graduate students may apply, and the other is a post-doctoral program for scientists who already have received the doctoral degree. Subjects include physical, medical, and biological sciences, as well as in anthropology and psychology other than clinical.

NSF estimates 1,100 such fellowships will be awarded next March. Stipends range from \$1,800 for first year fellows to \$4,500 for post-doctoral fellows. The usual dependency allowance will be \$500.

### **OCDM Outlines National Plan for Civil Defense and Mobilization**

Office of Civil and Defense Mobilization, in a 32-page report, has outlined the national plan for civil defense and defense mobilization under three major contingencies: international tension, limited war and general war, including massive nuclear attack. The plan has been promulgated in accordance with Reorganization Plan No. 1 of 1958, which merged Federal Civil Defense Administration with the Office of Defense Mobilization into the new OCDM.



"All citizens and governments at all levels, by virtue of their inherent obligation to support the common defense, are jointly responsible for the civil defense and defense mobilization of the nation," the plan states. The federal government is responsible for direction and coordination of the total national effort; the states are responsible for direction and coordination of activities and its political subdivisions, and local governments for programs of their subdivision.

OCDM said that professional, labor, service, religious, civic and social organizations are responsible for making such contributions to the preparation for and assurance of national, state or community survival as may be possible. For disaster services the agency said states and subdivision, with help from Uncle Sam, will stockpile necessary medical supplies and equipment and recruit and train personnel in disaster services. States also will use resources of non-governmental organizations such as the American Medical Association, American Hospital Association, and American National Red Cross.

### **VA Outlines Medical Research Plans, Emphasis on Aged**

The Veterans Administration, with \$15 million voted by Congress this year, plans major new emphasis on studies of mental and physical deterioration associated with aging. VA also has mapped programs in mental illness, cancer, heart and blood vessel disorders and tuberculosis. In addition, some 50 VA hospitals equipped for use of radioisotopes will have programs to develop new techniques of atomic medicine for diagnosis and treatment.

### **CAB Proposes to Permit Emergency Medical Stops on Airlines**

A change in commercial flight regulations to permit airlines to make unscheduled stops in order to provide transportation for persons in need of emergency medical treatment is being proposed by the Civil Aeronautics Board. Present rules prohibit certain carriers from engaging in local air transportation between certain

points on their routes, which is known as the "closed door" policy. CAB recently heard of a case where a line operating under the policy was prevented from supplying air transportation to a person in need of emergency medical treatment.

### **Dr. McGuinness Cites Need For More Physicians**

Dr. Aims C. McGuinness, special assistant to the Secretary of Health, Education, and Welfare, says that well-trained professional people in ever larger numbers are going to be needed to conduct medical research and to "bring this knowledge in the form of better medical care to our rapidly expanding population." Speaking at the American College of Preventive Medicine, Dr. McGuinness added that unless there is a marked increase in the production of physicians and other health personnel "not only the total research effort but the health services of the nation will be severely hampered in the years ahead." He forecast an increased medical research effort and estimated spending this year would exceed \$425 million.

### **Medical Determinations for Disability Freeze now 500,000**

The Social Security Administration's Medical Advisory Committee learned this week that slightly more than half of the initial determinations thus far considered under the 3-year-old disability freeze have been allowed. At a meeting of the committee in Baltimore, it was shown that 1,081,600 applying for the freeze had gone through their medical evaluation since the law was passed. Of these, 572,800 or 53% have been allowed. The agency gave no figures on total applications received.

Secretary Flemming of HEW told the committee that it had successfully worked out a sound method of determining disability "in a way which does not interfere with doctor-patient relationships." Under the system worked out for determining whether the disability requirement is met, a person who applies for disability insurance benefits or seeks to have his social security record frozen is first asked to get a statement from his physician. The latter is asked to report clinical find-

ings — the results of medical tests and lab exams. The decision whether a person is disabled is made by a team of trained people, including a doctor, in a state agency.

### **Civil Air Surgeon Post Proposed By Federal Aviation Chief**

The position with title of Civil Surgeon has been proposed within the new Federal Aviation Agency. The proposal by FAA Administrator E. R. Quesada would assure status for civil aviation medicine considerably higher than at any previous time under the Civil Aeronautics Administration. The American Medical Association has advocated such a position as the first step toward an adequate number of qualified medical examiners for airmen and other personnel, in the interest of passenger safety.

Directly responsible to the FAA administrator, the Civil Air Surgeon would have as his major function the direction of the civil aviation medical program and the goal of improvement of safety in air commerce through sound medical knowledge and research in civil aviation.

### **Congressional Elections and Probable Effect on Medical Legislation**

With the results of Tuesday's elections now in, an analysis of their probable effect on medical legislation during the 86th Congress convening January 7, 1959 is in order. Top heavy Democratic majorities in both the House and Senate make policy decisions of the Democratic leadership of key importance in medical as well as all types of legislation. Equally important, the make-up of all committees will be markedly altered.

In the Senate, for instance, when the margin was 49 Democrats to 47 Republicans, Senate committees were closely divided. With the Democrats picking up a record gain of 13 seats in the Senate, committee composition may run as much as 10 to 5 or 9 to 6 in favor of the majority party. A committee of major importance to physicians is the House Ways and Means Committee under Chairman Wilbur Mills (D., Ark.). Its membership for several years has been divided 15 Demo-

crats to 10 Republicans. In the 86th Congress, the committee will be considering legislation that would impose, on a compulsory basis, hospitalization and medical care benefits for retired social security recipients and their dependents. The committee also is expected to consider amendments to public assistance laws which in large measure are evolving into medical programs for the indigent. Keogh legislation to permit self-employed persons to establish annuities with deferred taxes will again be considered by Ways and Means.

At least seven of the present members of the committee will not serve in the new Congress. Their loss to the committee can be attributed to one death, a decision by four not to seek re-election to the House, and defeat of two at the polls in the Tuesday elections. The men who succeed these seven could shape the entire philosophy of the committee. There is a further possibility that the committee will be even more heavily Democratic; it is quite possible that it will have a line-up of 17 or more Democrats to eight or less Republicans.

### **Dr. Dale Alford Elected to Congress; Dr. Morgan Heads Foreign Affairs**

Physician members of the 86th Congress will number four, one less than the last Congress. Tuesday's elections bring back Drs. Walter Judd of Minnesota, Thomas Morgan and Ivor Fenton, both of Pennsylvania, and one newcomer, Dr. Thomas Alford of Arkansas. Defeated at the polls were Drs. Will Neal of West Virginia and A. L. Miller of Nebraska. Dr. Neal has been active on the health subcommittee of the House Interstate Committee and Dr. Miller on District of Columbia and Interior and Insular Affairs Committees.

Dr. Alford, a board ophthalmologist of Little Rock, ran for public office for the first time. He is 42 and has had an active practice. Son of a public school administrator, Dr. Alford was educated in Arkansas schools and received his medical degree from the University of Arkansas. He interned at Oklahoma City, spent his residency in Chicago and was assistant professor of ophthalmology at Arkan-



sas before serving during World War II in the Army Medical Corps. He has been practicing in Little Rock since 1948.

Dr. Morgan is scheduled to take over the chairmanship of the House Foreign Affairs Committee on which Dr. Judd also serves. Dr. Morgan would become the first physician to head that important committee in its 136 years.

### Medical Care in Cuba

Dr. Louis H. Bauer, Secretary General of The World Medical Association, has just returned from a semi-official visit to the Cuban Medical Association (Colegio Médico Nacional de Cuba) where he participated in the official opening of the new twenty-two story headquarters building.

Dr. Bauer reported that while in Havana, he had sought other sources than the medical profession to obtain information as to the current status of the medical profession with respect to the rendering of medical care services. He stressed that he had avoided discussing the situation with the doctors as he did not wish to involve them in any possible danger in retaliation for his observations.

The Secretary General of The World Medical Association reported that since October, 1957, when The World Medical Association intervened in the interest of humanitarian medical services for all people in Cuba, the situation has improved somewhat. Namely: . . . The Cuban Medical Association is now permitted to hold meetings and to publish its **Journal**.

However, the medical profession continues to need the support of The World Medical Association in its efforts to provide medical services to anyone needing aid on the basis of caring first for those most in need of these services regardless of race, color, creed or party politics. This is the duty and the right of every doctor under The World Medical Association's Declaration of Geneva and the Red Cross Convention of 1949.

Dr. Bauer reported that:

The revolution is active with actual fighting in all the provinces except Havana and Matanzas;

In the eastern provinces, doctors are forbidden to give medical aid to revolutionists. If they do so, they are warned to leave within two hours or be killed. As a result, hundreds of doctors with their families have been forced to seek refuge in Havana, Mexico and the United States;

Education is at a complete standstill. Even in Havana, the university and all public schools remain closed and all the faculty members are unpaid.

The Secretary General appealed to the other 54 member associations of The World Medical Association to implement the provisions of the resolution for the support of the Cuban Medical Association adopted at the XIIth General Assembly in August, 1958. He stressed the importance of basing all support and appeals upon the humanitarian precepts of medical service which can and must be completely divorced from the political aspects of the situation. He noted that it is the duty of the members of The World Medical Association to insist that every doctor everywhere in the world be protected in carrying out his humanitarian duties and that his rights in so doing be recognized.

### FEDERAL MEDICAL-HEALTH SPENDING FOR FISCAL YEAR 1959

(July 1, 1958 to June 30, 1959)

The Federal Government's medical activities are on a massive scale and they continue to grow. This year for all health programs (research, medical care, public health) Uncle Sam is spending about 62.6% more than he did five years ago, 13.5% more than last year. Programs in 22 separate agencies and departments of Government range from cancer research to federal employee clinics. The total cost is \$2.8 billion, or \$344.7 million more than last year. Right now the agencies and the Bureau of the Budget are working on requests to be presented to Congress in January. There is little question that the bills, when finally enacted next year, will set another new high for medical spending.

For six years now the Washington Office of the American Medical Association, through this annual budget report, has

charted this expanding course of federal medical activity, a service not performed by any other organization. We identify all programs, describe their purpose, give their present appropriations, and note the amount of increase. We do not attempt to evaluate them—to rate them as good, bad, or indifferent; as wasteful or invaluable. This is a factual study, based on scrutiny of appropriation acts passed by the last Congress and information supplied us by program and fiscal officers in the various departments and agencies, all of whom gave us their wholehearted cooperation. It covers the current fiscal year which ends next June 30.

While nearly 38 million people are eligible to receive all or part of their medical care from or through the Federal Government, medical care represents only a part of the total spent by the U. S. in medical fields. Many millions of dollars go for research, drug control, personnel training and other efforts not directly related to the rendition of medical care.

As in last year's report, we have listed in table form payments to disabled persons through programs which the Federal Government finances entirely or in part. Such beneficiaries now total nearly 6,000,000, a 15% increase over last year. Money paid them has increased to \$4.75 billion, over 40% more than last year.

MEDICAL-HEALTH BUDGETS OF FEDERAL DEPARTMENTS, AGENCIES AND COMMISSIONS FOR THIS FISCAL YEAR

Agency	Fiscal 1959	Fiscal 1958	Page
Department of Health, Education and Welfare .....	\$1,116,207,806	\$ 849,395,800	3-10
Veterans Administration .....	843,524,000	849,374,000	10-11
Department of Defense .....	751,115,000	702,305,000	12
Atomic Energy Commission .....	45,462,000	40,085,000	13
International Cooperation Admin. ....	39,600,000	37,300,000	13
Department of State .....	21,638,380	15,718,110	13-14
National Science Foundation .....	19,575,000	7,500,000	14
Office of Civil and Defense Mobilization .....	13,617,000	3,177,000*	15
Federal Employees Health Programs .....	11,000,000	10,000,000	15
Department of Labor .....	8,827,000	8,069,476	15
Panama Canal Co. and Panama Canal Zone Government .....	3,959,900	5,988,300	16

Department of Treasury .....	3,854,500	3,837,850	16
Department of Justice ..	2,105,000	1,796,000	16
District of Columbia .....	2,000,000	3,700,000	17
Federal Trade Commission .....	1,600,000	1,500,000	17
Department of Commerce .....	1,212,400	911,300	17-18
Civil Service Commission .....	426,000	387,000	18
President's Comm. for Employment of the Physically Handicapped .....	214,700	182,575	18
Small Business Administration .....	150,000	70,000	18
Department of the Interior .....	140,000	154,950	19
National Advisory Committee to Selective Service .....	19,000	19,000	19
Office of the Attending Physician of Congress .....	13,145	12,145	19
TOTALS .....	\$2,886,260,831	\$2,541,483,506	

\*The figure for fiscal 1958 is the appropriations of the Federal Civil Defense Administration and the Office of Defense Mobilization; now combined in the Office of Civil and Defense Mobilization.

ANNOUNCEMENTS

Aero Medical Association

30th Annual Meeting

Aero Medical Association

Statler Hotel

Los Angeles, California

April 27-29, 1959

Charles I. Barron, M. D.

Lockheed Aircraft Corporation

General Chairman

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Twenty-eighth Annual Spring Clinical Conference

of the

DALLAS SOUTHERN CLINICAL SOCIETY

March 23, 24, 25, 1959

The Statler Hilton — Dallas, Texas

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INSTRUCTIONAL COURSE

"American College of Allergists Graduate Instructional Course and Annual Congress, March 15-20, 1959, Mark Hopkins Hotel, San Francisco, California. Contact, John D. Gillaspie, M.D., Treasurer, 2049 Broadway, Boulder, Colorado."



# Obituary

Dr. Noonan Burgess Burch, 71, a practicing physician in Hot Springs since the early 1930's, died October 12, 1958. Dr. Burch was a native of Fulton, Miss. He received his medical degree from the University of Tennessee College of Medicine and did graduate work at Tulane University in New Orleans. He practiced at Hughes and Forrest City before coming to Hot Springs to join the Wade Clinic staff. After some 15 years association with that clinic, he established his own clinic. Dr. Burch was a member of the Garland County Medical Society and the Arkansas Medical Society. He was active in Central Baptist church and held the title of deacon emeritus at the time of his death. He was also a Mason and a Shriner. His survivors include his wife, Mrs. Lovenia Burch; four children, Beverly Burch, Sarah Beth Burch, Mrs. Catherine Burch Brown and Noonan Burgess Burch, Jr., all of Hot Springs; two brothers and three sisters.

## ANSWER—What Is Your Diagnosis?

### ANATOMY AND DIAGNOSIS KIDNEY-WILM'S TUMOR

**CLINICAL DATA:** One year prior to admission a lemon sized mass was found in the right side of the abdomen. It was without symptoms. One week prior to admission the urine contained bright red blood. On admission the hemoglobin was 8.1 gm; Hemat. 27%; RBC 2.61. After nephrectomy the patient was treated with X-ray grid therapy and nitrogen mustards. Metastatic nodules in the lungs increased in number and size.

#### Lab Data:

**SURGERY:** Right nephrectomy.

**PATHOLOGY:** Wilm's tumor proven.

**X-RAY FEATURES:** The lower half of the right kidney is replaced by a large expanding mass. The upper calyces are compressed and dilated.

From the University of Arkansas Medical Center Department of Radiology.

# PERSONALS AND NEWS ITEMS

Dr. R. B. Robins, Camden, was the principal speaker at the annual meeting of the Idaho Academy of General Practice held in October at Boise, Idaho. Dr. Robins spoke on "Current Problems in American Medicine" at their annual banquet and also spoke on "Medical Philosophy in Economics" at a luncheon.

Last October 13-16, Dr. H. Fay H. Jones, Little Rock, attended the South Central Section of the American Urological Association in Dallas, Texas.

Addressing an October meeting of the North Little Rock Rotary Club was Dr. T. Duel Brown. Dr. Brown spoke on hypnotism.

Dr. W. H. Bruce, public health officer at Pine Bluff for 25 years and a former health officer of Conway County has announced his retirement, effective January 1. Dr. Bruce's retirement came as a result of the compulsory retirement age.

Minutes of Special Meeting, House of Delegates, Arkansas Medical Society, 1:00 p. m., Sunday, November 23rd, 1958, Hotel Marion, Little Rock, Arkansas.

President Hundley called the House to order at 1:00 p. m. and announced that the purpose of the meeting was to consider matters of legislation which would come before the Arkansas Assembly during its 1959 meeting. Dr. Hundley turned the meeting over to the Speaker of the House, C. Lewis Hyatt of Monticello.

Dr. Hyatt then introduced Dr. Dale Alford, newly elected member of Congress from the Fifth District, who spoke briefly saying that he hoped to have the good wishes and advice of all physicians, including those who had opposed his election. He said that he hopes that Arkansas and Arkansas physicians would be proud of his record in Congress.

At the request of the Speaker, Mr. Schaefer called the roll and the following delegates and members seated as delegates were present:

Arkansas, T. S. Van Duyn; Ashley, L. E. Edwards; Baxter, E. M. Gray; Benton, K. A. Siler; Boone, Hugh M. Fogo; Columbia, Joe F. Rushton; Conway, Harold E. Hyder; Craighead-Poinsett, Horace C. Barnett; Bascom P. Raney; Joe Verser; Cross-St. Francis, K. E. Beaton; Desha, H. T. Smith; Drew, C. Lewis Hyatt; Faulkner, C. A. Archer, Jr.; Garland, Frank Burton, Martin Eisele; Hempstead, J. W. Branch; Hot Spring, C. R. Ellis; Independence, J. J. Monfort; Jackson, Jabez Jackson; Jefferson, S. C. Monroe, Charles W. Reid; Lafayette, Charles Cross; Lonoke, J. A. Martin; Miller, Gerald Teasley; Ouachita, Henry Hearnberger; Polk, David O. Hefner; Pulaski, John Downs, Edgar Easley, G. T. Jansen, Bill Dave Stewart, Alfred Kahn, Jr., J. A. Harrell, Robert L. Henry, S. Wm. Ross, John Riggin, J. Shuffield, Douglas Lawrason, W. A. Snodgrass, Jr.; Searcy, H. J. Hall; Sebastian, W. R. Brooksher, Art B. Martin, L. A. Whittaker; Sevier, R. B. Dickinson; Union, George Burton, G. D. Murphy, Jr.; Washington, Stanley Aplegate, H. W. Ward; Woodruff, Fay B. Millwee; Councilors Hugh Edwards, H. W. Thomas, Perry Dalton, John Wood, Robert Jones, Ross Fowler; President Louis K. Hundley; President Elect James M. Kolb; Secretary Elvin Shuffield; Past Presidents T. D. Brown, R. C. Dickinson, R. B. Robins, Fount Richardson, Euclid Smith, Charles Henry, and O. J. T. Johnston.

Speaker Hyatt then introduced the Chairman of the Legislative Committee, Elvin Shuffield, who spoke on the dangers of complacency among physicians regarding anticipated efforts of the osteopaths to obtain full surgical and medical privileges in Arkansas.

Dr. Shuffield then introduced Mr. Lawrence Blackwell, who has been employed as the Society's Legislative Representative. Mr. Blackwell spoke briefly expressing the necessity for talking to State Legislators now rather than waiting until the Assembly convenes.

Dr. Shuffield then introduced Mr. Eugene Warren who urged the members of the House to look at the situation with regard to the osteopaths realistically and to take immediate action to combat the propaganda campaign being carried on by their organization.

After discussion by Dr. W. Myers Smith and upon the motion of Kolb and Easley, the House voted to instruct the Legislative Committee to help the State Board of Health obtain its budget requirements. Herron advised the House that it had been proposed that other professions be represented on the State Board of Health.

Verser spoke regarding the difficulty the Physical Therapists had trying to operate a separate board. He requested and the House voted, upon the motion of Wood and Kolb, to work for a law which would allow the State Medical Board to absorb the Physical Therapists Board.

Dr. Van Duyn nominated Dr. K. E. Beaton of Wynne for vice council to fill the unexpired term of Dr. Millwee. Upon motion of Kolb and Wood, Dr. Beaton was elected by acclamation.

Charles Henry discussed the Boggs Report on the Operation of the University of Arkansas Medical Center. Upon the motion of Thomas and Whittaker, the House voted to instruct the president to appoint a committee to study the report and make recommendations to the Executive Committee of the Society for immediate action.

The House adjourned at 3:30 p. m.

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## *Proceedings of Societies*

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The Second Councillor District of the Arkansas Medical Society held its Fall meeting in Batesville at the Batesville Country Club October 22, 1958. The program consisted of a talk by Mr. David Ray, superintendent of the Children's Colony now being constructed in Conway, Arkansas. Also speaking to the group was Congressman Wilbur D. Mills. During a brief business meeting, the following officers were elected: Dr. J. J. Monfort, Batesville, President; Dr. Hugh Edwards, Searcy, Vice-President; Dr. Charles A. Taylor, Batesville, Secretary. The Spring meeting will be held at Searcy, Ark.

A one-day regional meeting of the American College of Physicians was



held at the Arlington Hotel in Hot Springs October 18. The region is composed of the states of Arkansas and Oklahoma. Approximately 100 attended including Dr. Dwight L. Wilbur, San Francisco, California, president of the American College of Physicians. Presiding were Dr. J. Nye Compton, Little Rock, regional governor for Arkansas, and Dr. Bert F. Ketz, Oklahoma City, regional governor for Oklahoma.

The Hot Springs-Garland County Medical Society met at the officers' club at the Army and Navy hospital in October. The Garland County Bar Association was guest of the Society. Dr. Robert Atkinson, president, presided over a business session.

The Pulaski County Medical Society gave \$10,187 to the University Medical Center to establish a virus research laboratory in the proposed new \$2,000,000 research wing to be built at the Center. The money will be matched by federal funds in the construction of the research wing.

William A. Richardson of Oradell, N. J., editorial director of the "Medical Economic" physicians publication, spoke on "Will You Be Caught with Your Economics Down?" at the November meeting of the Pulaski County Medical Society.

Contributors to the American Medical Education Foundations from the state of Arkansas — October 1958

A. W. Roberts, Texarkana	\$25.00
Total	\$25.00

The Ouachita County Medical Society met in dinner session Thursday evening, November 6, at the Camden Hotel. Speaker for the occasion was Mr. James W. Foristel, Legal Advisor, American Medical Association, Washington, D. C. Mr. Foristel discussed legislative activities of the American Medical Association in Washington.

BUY

U. S.

SAVINGS

BONDS

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## Woman's Auxiliary

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The Auxiliary to the Hot Spring County Medical Society held its regular monthly luncheon meeting October 14 in the Terrace room of the Magnolia Cafeteria in Malvern with Mrs. M. C. Berry as hostess. Mrs. Paul Means gave a report from the projects committee which directs fund raising activities for the group. The Auxiliary contributes to the expenses of a nursing student at Arkansas Baptist Hospital with the proceeds from sales of candy and nuts for that purpose.

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## BOOK REVIEWS

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**CLINICAL PROCTOLOGY.** J. Peerman Nesselrod, M.D. W. B. Saunders Co. Philadelphia, London. Pp.: 296. June 11, 1957. \$7.00.

This is a 285 page manual of proctology for the practicing physician. It is well illustrated and written. The emphasis here tends to be on surgical therapy, which seems entirely appropriate to the purpose of the book. Emphasis seems to be on the more common conditions. The reviewer would like to see a little longer section on neoplastic diseases, although it is really not within the scope of this type of manual to present a complete coverage of this topic. This book is recommended to the practicing physician. AK

**THE ESSENCE OF SURGERY:** C. Stuart Welch, M.D., M.D., P.L.D., Professor of Surgery, Albany Medical College of Union University and, Samuel R. Powers, Jr., A.B., M.D., M.Sc.D., Professor of Experimental Surgery, Albany Medical College of Union University; Pp. 320, Illustrated; W. B. Saunders Co., Philadelphia, 1958.

Welch and Powers have presented a charming philosophical study of surgery. Beginning with foundations and fundamentals, the history of their subject is traced quickly to the present day "disciplines." They have agreed that surgery contains much of the dramatic side of the field of medicine, but not all.

The concept of surgery here presented includes the study of care and consideration of the loss of

body fluids, of body tissue and infections. Thus all tissue injury, blood transfusions, fluid replacement, and the treatment of infections by chemotherapy are to be found in the surgeon's field. Definitive surgery is not spelled out, however, the physiological principles of the body fluids, shock, pre and post-operative considerations are clearly presented.

In the section on operative surgery, we are presented with surgical technique as consisting of "Asepsis, hemostasis and proper dissection." Extirpative and Reconstructive Surgery follow to cover the surgical procedures and anesthesia is included as an integral part of the subject.

The text is lucid, entertaining, and instructive, classed as leisure reading, it is rather technical, classed as scientific literature, it is philosophical. But it is a delightful and informative little book for anyone who is active in the medical world today, student and teacher, research worker, and practicing physician. FR

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## TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

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### WE LOOK AHEAD

*The monthly "Tuberculosis Abstracts" now in its 31st year has changed its name in order to reflect more nearly the program of the National Tuberculosis Association and its affiliates and the interests of the general practitioner for whom it is issued.*

Something new has been added! As you will note above, not only has the format been changed somewhat beginning with this first issue of *Abstracts* for 1959, but from now on these abstracts will be concerned with "other respiratory diseases" as well as tuberculosis.

Actually this is not a radical departure for the National Tuberculosis Association and its affiliated associations. For 35 years many of the affiliated associations have assisted in solving important local public health problems in addition to tuberculosis. For decades the tuberculosis associations have attempted to improve school health programs and have helped to promote adequate health departments. For

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JAMES E. PERKINS, M.D., *Managing Director, National Tuberculosis Association, October, 1958.*



almost three years the NTA itself, through official action of its Board of Directors in May, 1956, has been involved in the control of both infectious and non-infectious respiratory diseases. Little publicity has been given to this step since tuberculosis continues to be a major public health problem, and will continue to receive primary emphasis by the NTA and its affiliated state and local associations throughout the country so long as this is true.

### CONTINUING IMPORTANCE OF TB

The present status of tuberculosis control in this country would lead one to think that the control of TB may require a long time. The case rates of tuberculosis have failed to decline as rapidly as the death rates. It is currently estimated that there are about a quarter of a million active cases of tuberculosis in the United States, of which 100,000 are unknown to health officials and probably are not under medical supervision.

While there are fewer patients under treatment in tuberculosis hospitals, there are increasing numbers being treated as "out patients." Unfortunately some of the latter group are not receiving adequate medical supervision.

### TB AND OTHER RESPIRATORY DISEASES RELATED

The relationship between tuberculosis and other respiratory diseases is so intimate, particularly from the medical standpoint, that from the very beginning it has been impossible to be concerned only with tuberculosis and not with other respiratory diseases. Thus, silicosis, which notoriously plays an important role in precipitating the development of active tuberculosis disease, has been a concern of the NTA and its affiliates from the time of the founding of the NTA more than half a century ago. At the present time, through improved bacteriological methods, more and more illnesses clinically indistinguishable from tuberculosis are being recognized which are found to be due to mycobacteria similar to, but distinct from the *Mycobacterium tuberculosis*. There is an intimate relationship between tuberculosis and emphysema and chronic bronchitis, and outbreaks of influenza notoriously

have been accompanied by a spiking of the tuberculosis death rate.

Respiratory diseases as a whole form a group of illnesses of tremendous public health importance which have been badly neglected in the past, and which the NTA, together with its medical section, the American Trudeau Society, and the affiliated tuberculosis associations, can be helpful in studying and bringing under better control. Based on a three year average of deaths in 1953-55, these diseases as a group (excluding cancer of the respiratory system) are fifth in the list of causes of death, being exceeded only by heart disease, cancer, vascular lesions affecting the central nervous system, and accidents. If cancer of the respiratory system is added to the group, it becomes the number four cause of death.

So far as frequency of illness is concerned, rather than mortality, there is no question but that respiratory illnesses head the list.

### GENERAL PRACTITIONER IMPORTANT

Why should this extension of interest be mentioned in an *Abstract* intended primarily for the general practitioner? The reason is that the general practitioner is the key person in the control of all of these respiratory diseases, including tuberculosis. As far as tuberculosis itself is concerned, with the development in recent years of effective drugs in the treatment of tuberculosis, the general practitioner has become even more important than he was before. He always has been a most fruitful source of finding cases of tuberculosis. The degree to which he keeps tuberculosis in mind as a possible cause of the symptoms which he notes in patients consulting him determines to a large extent how quickly tuberculosis is diagnosed, how soon the patient is put under adequate treatment, the patient's chances for recovery with a minimum of permanent disability, and the likelihood of spread of the disease to others.

Now that patients are discharged earlier from hospitals than before and at a time they must continue their therapy for many months after discharge, the general practitioner is a key man in determining the ultimate status of the patient. If he fails to keep the patient under adequate super-

vision and therapy for a sufficiently prolonged period of time, relapse is almost inevitable, resulting in an individual who is more likely to have a permanent disability if not an early death, and with the likelihood of further spread of the disease to his associates.

With regard to other chronic respiratory conditions, the practicing physician, again, is the key person with regard to detecting these in their early stages and putting the patient under adequate supervision and therapy to prevent the patient from becoming a chronic respiratory cripple. He is the key man in deciding whether or not the citizens in his community are adequately immunized against those respiratory diseases for which vaccines are available (or in which the respiratory system may be involved in transmission), such

as diphtheria, whooping cough, smallpox, poliomyelitis, and influenza.

#### *TB STILL PRIMARY INTEREST OF TB ASSOCIATIONS*

The National Tuberculosis Association, its medical section, the American Trudeau Society, the state tuberculosis associations and Trudeau societies and the local associations will continue to devote their primary attention to the tuberculosis problem. They are also interested in trying to help in the solution of the other important respiratory illnesses plaguing mankind. They will promote good health in your community in close cooperation with the medical and nursing professions and public health officials. Through research, through community service, through education — new ways for attacking the broad problems of respiratory disease will be found.



# The JOURNAL

## OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

FEBRUARY, 1959

Number 9

## Visual Improvement in Senile Retinopathy Following Lipotropic Therapy

JAMES L. PICKENS, M.D.\*

Statistics compiled by life insurance companies indicate that the number of persons at age sixty-five or over nearly quadrupled in the United States during the first half of this century. Today the life expectancy of women is seventy-three years and that of men is sixty-seven years. (1) This lengthening of the life span of both sexes can be attributed in large measure to the achievements made by medicine and the allied sciences in the control of many of the diseases which previously took a heavy toll of life in infancy, childhood, adolescence, early and middle adulthood. It can be anticipated that each new therapeutic development will further contribute toward a gradual extension of life expectancy.

As the individual's potential capacity to live longer increases, our offices will be visited by increasingly greater numbers of persons in the upper age ranges. Even now the percentage of patients presenting ocular symptoms generally associated with advancing age is relatively high. Preservation of their visual status at a level which will permit them to carry on their daily pursuits and occupy their leisure hours to their personal satisfaction is of paramount concern to these older subjects. How to arrest or effectively retard the progress of the degenerative changes which so seriously limit visual function in aging patients presents a distinct challenge to the physician.

Arteriosclerotic involvement of the retina and choroid is the most prominent and prevalent problem confronting us. It is, therefore, fortunate that the eye lends itself especially well to the study of vascular change. Not only can the character of the vessels and the definitive appearance of the retina be readily observed, but the direct effect of sclerotic processes on visual acuity can be rather accurately followed. Correlation of rate of loss of vision with degree and extent of degeneration of the vascular components of the retina is possible and offers a basis for estimating the remedial influence of therapy in preventing further visual impairment. In addition, to the degree that the eye mirrors changes taking place in the hidden reaches of the vast circulatory network, systemic therapies which produce apparent benefits to the eye may indeed be eliciting comparable responses in any of the internal viscera and the blood channels serving them. Thus, studies principally designed to measure the results of treatment in terms of eye function may in fact offer data which give us a greater insight into such perplexing and fatal diseases as atherosclerosis.

Various specific approaches to the treatment of senile retinopathies have been advanced. Yet, none has proved to be particularly satisfactory and most have virtually been abandoned because of their debatable usefulness. However, in recent years attention has been directed toward the possible importance of the role played by lipotropic substances in correcting the errors

\*Rogers, Arkansas

of fat metabolism which are considered to measurably contribute to the decline of vascular performance. The therapeutic influence of lipotropes has been studied in several of the medical specialties, and application of lipotropic therapy to the prevention or control of ocular manifestations common to older subjects has been undertaken by a number of investigators. Eggers, (2) Siegel, (3) Loewe (4) and Hilgartner, (5,6) among others, have reported favorably on the value of lipotropic agents in ophthalmology.

The present report incorporates observations made in private practice over a four year period of time while treating subjects with the commercially available product Lipotriad®\*. The latter preparation is a rich source of the well-known lipotropic factors choline, inositol and methionine. In addition, it contains the important oxytropic principles of the B-complex and vitamin B12.

#### MATERIALS AND METHODS

In the course of this study 376 patients were placed on Lipotriad therapy. Age and sex data on these subjects are included in Table I. All exhibited retinal changes intimately associated with varying degrees

ing developments such as cataract, glaucoma or other diseases of the eye, or superimposed involvements elsewhere in the body's vascular pathways.

The objective was to restrict the investigation to an evaluation of the therapeutic usefulness of lipotropic medication in preserving or improving the existing visual status of persons with uncomplicated senile retinopathies. The criterion for initiation of Lipotriad therapy was a recognized impairment in visual acuity accompanied by a set of positive findings clearly referable to senile retinopathy. Thus, to qualify for inclusion in the treatment program a careful examination of the retina had to establish that certain of the characteristic changes were in progress: narrowing of the lumen due to deposits in the vessels; loss of macular reflex; macular degeneration with its typical reddish-brown discoloration; appearance of yellowish dots and stippling throughout; hyaline degeneration in the deeper layers; generalized thinning of the retina with attendant distinctive pigmentation patterns. In many instances case records were available describing the progression of the disease prior to institution of the lipotropic treatment. These data made possible a comparison of the changes noted during the treatment period with those which had taken place in the immediate past. In a sense, then, such cases acted as their own controls for the purpose of determining response to therapy.

Once the diagnosis had been made the patient was instructed to take one teaspoon Lipotriad three times daily, after meals. A minimum of six weeks was allowed to elapse before the next examination was scheduled. In some instances re-examination took place only after an interval of several months.

On the occasion of each visit visual acuity was measured and the appearance of the retina carefully noted. During the course of the examination the patients were queried to learn how conscientious they had been in their daily use of prescribed medication. As such time they generally commented as to whether or not they felt they were obtaining benefit from treatment with Lipotriad. When this information was not volunteered it was ascertained

TABLE I

#### AGE AND SEX DISTRIBUTION OF PATIENTS PLACED IN LIPOTRIAD PROGRAM

PATIENTS	YEARS OF AGE						Totals
	40-50	50-60	60-70	70-80	80-90	90-100	
No. in each Group	1	26	111	172	64	2	376
No. of Females	1	13	70	105	34	2	151
No. of Males	0	13	41	67	30	0	225

of visual loss. As might be anticipated when conducting a clinical project extending over a period as long as four years, a number of the cases were lost through death, change of abode, or simply because of an apparent or suspected disinterest in the constant routine of the treatment program. Others were withdrawn from further consideration because of complicat-

\*Marketed by the Carroll Dunham Smith Pharmacal Company, New Brunswick, N. J.



by direct questioning. Unless the economic factor prevented, the individual was maintained on Lipotriad indefinitely, with periodic examinations being arranged in each case as circumstances would permit.

#### REPORT OF CASES

The three cases described below will fairly illustrate the characteristic pattern seen in those patients who respond to treatment with Lipotriad:

#1 M. C. (female). First seen in January of 1954. Her eyes were normal in all respects except for macular degeneration typical of senile changes. The vision was 20/100 in the right eye and 20/80 in the left, corrected. She was placed on Lipotriad and seen again at the end of six weeks. In this short period of time most of the redness of the macula had disappeared. Vision had increased to 20/40 in both eyes. By the end of three months of treatment there was partial return of the macular reflex, with 20/30 vision in each eye. This vision has been maintained until the present.

#2 M. A. (female). First examined in June of 1955. Her vision was 20/30 in the right eye and 20/40 in the left. Macular reflex was absent. Several areas revealed hyaline degeneration, and beading in the vessels was apparent. After three months of Lipotriad the vision in the right eye remained at 20/30 and had increased to 20/30+3 in the left. At the end of six months therapy the right eye vision was 20/25, and the left 20/25+1. The macular reflex had now returned. This visual status has remained unchanged until the present.

#3 J. L. (male). When first seen in April 1956 his vision was 20/70 in the right eye and 20/50 in the left. In addition to the findings referable to senile retinopathy the patient complained of anginal pain. This complaint was confirmed by another physician. He has been kept on Lipotriad since his first examination. Anginal attacks decreased shortly after start of treatment. When last examined in January 1958 he had had no pain for the preceding six months. Vision had increased to 20/40 in the right eye and 20/25 in the left. The appearance of the retina had markedly improved.

#### RESULTS

The single eye served as a unit of consideration in evaluating the effect of Lipotriad on visual performance. Selection of eyes on which to report has been limited to cases which have been adequately followed over a period of several months. Thus, data on 340 eyes have been accepted for presentation at this time.

Central visual efficiency values were calculated by the method outlined by the Council on Industrial Health of the American Medical Association (7). This revision of the 1940 method for "Appraisal of Loss of Visual Efficiency" was approved and accepted by the Executive Committee of the Section on Ophthalmology, A.M.A., in June 1955. In this particular system percentage of central visual efficiency corresponds to central visual acuity notations for distance, employing 20/20 as 100 percent efficiency. Based upon the data accumulated in this manner the influence of Lipotriad on visual efficiency is demonstrated in Table II.

TABLE II  
EFFECT OF LIPOTRIAD ON  
CENTRAL VISUAL EFFICIENCY  
(340 EYES)

Percentage Increase or Decrease in Visual Efficiency	INCREASED VISION		DECREASED VISION		UNCHANGED VISION	
	No. of Eyes	Percent	No. of Eyes	Percent	No. of Eyes	Percent
0%	-	-	-	-	93	27
5%	86	25	22	7	-	-
10%	42	12	9	3	-	-
15%	39	11	5	2	-	-
20%	14	4	2	1	-	-
25%	4	1	4	1	-	-
30%	7	2	1	*	-	-
35%	2	1	1	*	-	-
40%	2	1	1	*	-	-
45%	4	1	0	0	-	-
50%	2	1	0	0	-	-
Totals	202	59	45	14	93	27

\*=Less than 0.5 percent; accepted as 0% value.

## DISCUSSION

Inspection of Table I shows that all but three patients placed in the study were over 50 and less than 90 years of age. Seventy-five percent of the subjects were 60-80 years old. Of these 283 individuals, 60 percent were females. The latter figure is almost identical with the percentage of females included in the entire series (62%). This finding would make it appear that uncomplicated senile retinopathies are more frequently a problem in older women than in older men. More than likely such is not the case. It is probably an indication that males have a greater reluctance to seek medical advice in the earlier stages, if at all. Such an interpretation is borne out by the fact that in this study the males, in general, were more advanced in their disease than the females at the time of the first examination.

An analysis of Table II reveals that an increase in central visual efficiency was noted in 59 percent of the 340 eyes studied. Of the 202 eyes in which visual function improved in response to treatment with Lipotriad, the increase in visual efficiency ranged from 5-20 percent in 181 of the eyes (90%). As one would suppose, the greater improvement in vision occurred in those subjects in whom the retinopathy was less far advanced. Further, the degree of increase in visual efficiency closely paralleled the extent of improvement observed in the general appearance of the retina.

In 27 percent of the remaining 138 eyes vision was not improved, but, by the same token it did not get worse, and progression of the disease was not apparent upon retinal examination. It might be theorized that visual loss would have been incurred to some extent in a certain percentage of these cases had they not been maintained on Lipotriad for prolonged periods.

Thus, in 87 percent of the 340 eyes carefully followed in the course of this clinical study, visual acuity increased or remained essentially unchanged during the period of Lipotriad administration.

Only 14 percent of the eyes showed a decline in visual efficiency and an associated progressive retinal degeneration while on lipotropic medication. And it is rather interesting to see that in half of those experiencing a decrease in visual function the

loss in visual efficiency was only 5 percent. Again, one could speculate that a greater visual impairment would have taken place had not Lipotriad retarded progression of the degenerative processes which contribute to the development of visual dysfunction.

## CONCLUSIONS

Most of the patients stated they "felt better" while taking Lipotriad. After several weeks of treatment, 90 percent of the subjects reported an improvement in appetite, an increased feeling of well-being, less fatigue and greater vigor. The families often mentioned that they noticed the patient had become more alert. It is, therefore, apparent that Lipotriad is an excellent nutritional tonic for the older patient.

Not infrequently other complaints disappeared after the individual was placed on Lipotriad. For example, four of the patients who had been suffering from angular pain shortly became symptom-free. The general health of many of the studied subjects seemed to be improved in response to continued administration of this lipotropic preparation.

Improvement in visual acuity and in the general appearance of the retina was quite gratifying. Since the condition studied is one which is normally progressive, the results observed take on added significance. On the basis of the results seen in this four year period of evaluation, it may be concluded that Lipotriad is helpful to the large majority of patients presenting uncomplicated senile retinopathies. It offers a nutritional approach to the problem of control of vascular changes which precede or provoke retinal degeneration and the resultant decline in visual acuity.

## SUMMARY

Over a period of four years, 376 patients were placed on Lipotriad therapy, one teaspoon three times daily, after meals. All presented the typical picture of uncomplicated senile retinopathy. The subjects ranged in age from 50-90 years, with three exceptions. Seventy-five percent of the patients were between 60 and 80 years of age. An interesting finding was that 60 percent of these were female.

Central visual efficiency was graded in percentage values according to the revised



system outlined by the Council on Industrial Health of the American Medical Association in 1955, employing 20/20 as 100 percent visual efficiency. The data obtained on 340 eyes adequately followed during many months of treatment formed the basis for evaluating the results of therapy.

Progressive retinal degeneration was seen in only 14 percent of the eyes of the treated subjects. On the other hand, 27 percent of the eyes showed no further loss in visual acuity during the period of treatment, and visual improvement in varying degrees was observed in 59 percent of the eyes while the patients were receiving Lipotriad therapy. Thus, visual acuity was maintained or improved in 87 percent of all the eyes studied. Most of the individuals reported an increased feeling of well-being while taking Lipotriad, in some patients other complaints disappeared, and the general health of the majority of subjects was favorably influenced by daily administration of this lipotropic preparation.

It is concluded that Lipotriad is helpful to the majority of patients with uncompli-

cated senile retinopathies. It offers a sound nutritional approach to the problem of control of central vision loss in older subjects.

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# Mutual Problems of Medical Practice and Public Health\*\*

L. E. BURNEY, M.D.\*

One of my first assignments as a commissioned officer in the Public Health Service, in the mid-1930's, was to the dispensary operated in Hot Springs National Park as a means for controlling the spread of venereal disease by infected, indigent persons then migrating from state to state in large numbers. It was a good job: plenty of interesting cases to see; plenty of time to work them up. The dispensary opened at 6:30 a. m. and closed at 3:30 p. m.—noon on Saturdays. After that I was free—to play golf on one of your splendid links, or otherwise to enjoy the scenery, the facilities for recreation, and the many pleasant associations Mrs. Burney and I made in the community. It is a real pleasure to come back to Hot Springs today.

In the thirties, as now, the Public Health Service was acquiring new responsibilities which had to be met by a relatively small professional staff. We moved often and fast as young officers; and although Public Health Service resources have increased with our responsibilities, the same high mobility still characterizes the early careers of most of our physicians.

There are some personal disadvantages to the physician from frequent change of assignment. For one thing, he can't put down roots and count on a long career of active practice in his chosen community. I would assume that this is one of the great attractions of private practice in Arkansas. Your State medical association can boast, as few others can, a flourishing Fifty Year Club, whose members have celebrated their golden jubilee as physicians. Perhaps this is not surprising when one observes that in 1956, over one-fourth (27%) of the physicians listed as in active private practice in Arkansas were 65 years of age and over. I was indeed astonished to learn that about 13 percent were in the age group 75-94 years,

with representatives of every birth-year except 1868.

An environment that fosters long and active life challenges attention. Two years ago, epidemiologists in the Public Health Service's heart disease program compared the mortality experience due to coronary disease in the different States. They found significantly lower general death rates as well as mortality rates due to coronary disease in the West North Central and West South Central States—the latter group including Arkansas. About the lowest rates in the country were in North Dakota.

We became interested in learning something about the factors contributing to these differentials. Was it diet? Inheritance? Outdoor exercise? Fewer stresses? Greater freedom from toxic substances in air and water? As a result, the Service has been cooperating in a study by the medical profession of six northeastern counties of North Dakota, representing two medical societies. All of the physicians banded together to report and follow-up with detailed information on every coronary case that came to their attention in a 12-month period.

They have conducted the study themselves; the only contribution of the Service has been to provide a full-time medical consultant and assistance to the medical societies in tabulation and analysis of the physicians' data. The study period was completed December 31, 1957 at which time about 200 cases had been included. The medical societies are in process of preparing the report and I have just learned that the last time their representatives were in Washington to discuss the statistical tabulations, they were talking about taking on a state-wide survey of rheumatic fever. Meantime, a similar research project has been undertaken by physicians in Connecticut—a State with very high coronary death rates. I am sure that medical practice and public health will obtain much useful information by

\*Surgeon General, Public Health Service, U. S. Department of Health, Education and Welfare, Washington 25, D. C.

\*\*Delivered at the 82d General Session, Arkansas Medical Society, Hot Springs, Arkansas, May 5, 1958, at 2:00 p. m.



comparison of the findings of these two studies.

I have gone into these projects at some length because they seem to me to illustrate rather forcibly the subject of my talk: Mutual Problems of Medical Practice and Public Health. It may interest you to know that this topic was suggested by a group of practicing physicians who for the past year have been conferring with me informally on medical practice relations.

There can be no doubt in any of our minds that cardiovascular disease is one of the major problems that confront both medical practice and public health, even in States with so favorable a mortality experience as Arkansas. The cardiovascular diseases, of course, comprise only one of many problems that require the joint concern and action of practicing physicians and public health agencies. All of the chronic diseases, mental illness, viral infections, accidents, and exposure to new environmental hazards constitute the major challenge to medicine and public health today. It is a formidable challenge, not only because those categories encompass a wide range of specific causes of death and prolonged illness; but also because their effects are disastrous to the individual patient, his family, and the community; and because medical science has not progressed as far in giving the physician and the public health agency effective methods of combating these conditions as it has in enabling us to prevent and even eliminate bacterial and parasitic diseases.

I, for one, am confident that scientific research will give us the means to prevent the occurrence of some forms of chronic disease and mental illness. I am confident that we shall conquer the viral infections. I know that we can now prevent a great many accidents, a great many exposures to environmental hazards such as radiation and toxic chemicals. Above all, I am sure that physicians in private practice and public health can now substantially reduce the deaths due to chronic diseases and can maintain a great many patients with these disorders in better health and active life for long periods of time. The scientific means to accomplish those results are at hand; and medical scientists

are constantly discovering new means and improving those already available.

A brief glance at your program endorses this statement. A very little more than ten years ago, Dr. Pritchard would not have been able to give his fine lecture on the Rh negative patient. The terms gamma globulin, steroids, and Papanicolaou smears also were unknown. The brilliant advances in surgery of congenital heart disease, discussed by Dr. McGoon, have occurred in the same period. I am sure Dr. Erickson will mention tomorrow some surgical techniques and pharmacological agents of equally recent origin in his paper on the treatment of painful terminal illness. Other speakers will undoubtedly report notable progress in basic knowledge or techniques in their respective fields.

As I see it, the foremost task of medicine and public health is to speed the present rapid progress in medical science and to bring about the widest possible, prompt application of knowledge and skills. With your indulgence, therefore, I propose to talk with you a few minutes about what the Public Health Service, along with State and local health departments, is doing and can do to assist in the great scientific revolution now going on in medicine and public health.

The Public Health Service is administering programs designed to promote the national effort in research and training, and in the development of community health facilities and services. We do this primarily through assistance to state and local organizations, both public and private.

#### RESEARCH AND TRAINING

In a country as far-flung as ours, one with 48 state jurisdictions, it is essential that all sources of support—governments, industries, private foundations, voluntary associations—do all in their power to strengthen the Nation's scientific effort. In the past decade, the total national investment in the medical and biological sciences has increased fourfold, from about \$88 million a year to nearly \$360 million in 1957. The Public Health Service's appropriations for research and training in research amount to about 40 percent of that sum. And three out of every four of

our research dollars go to public and non-profit institutions outside the Federal Government.

Here in Arkansas, for example, where your State Government, your leaders in public affairs, and the medical profession are exerting every effort to expand your medical school, research grants to the University of Arkansas by the National Institutes of Health and the Public Health Service this year amount to about \$300,000. In addition, two young scientists now in your University medical school have received NIH fellowships for advanced research training.

Good research facilities and training have been recognized as the cornerstone of modern medical education. Dean Lawrason has done an outstanding job in his efforts to recruit highly qualified teachers and research scientists so that Arkansas' young men and women may have in their own State the best possible preparation for careers in medical practice, research, or public health.

The complex nature of contemporary medical science, however, places the highest priority on adequate research facilities in our medical schools. The pre-clinical and clinical sciences now encompass entire new disciplines and new techniques, all unknown or merely talked about, when most of us physicians here today were in medical school. I was, therefore, gratified to approve a Public Health Service grant of something over a million dollars to assist the University of Arkansas in constructing an urgently-needed research building at the University Medical Center. It is encouraging to know, also, that this medical association is supporting the University in this vital project.

The support of medical research and training is, I believe, one of the most satisfying ways in which medical practice and public health can join in solving our mutual problems. The harvest from increased investments in medical research is not reaped overnight; but we can be sure that it will be a rich one, far beyond predictable estimates.

I have had some direct observation of the yield of medical research this past year in our National Institutes of Health

programs. The interest of your association in cervical cancer, for example, calls to mind our cytology research program. Our first pilot study in vaginal cytology, using the Papanicolaou technique, was conducted here in Hot Springs in 1947. Moving to the University of Tennessee in Memphis in 1951, we greatly expanded this study. Since 1954, we have initiated other cytology projects in Columbus, Ohio; Louisville, Kentucky; Madison, Wisconsin; Philadelphia; San Diego; and Washington, D. C. Many hospitals and practicing physicians are now applying the technique for case identification. It is estimated that some 3 million women are receiving the test annually, in addition to those in our study groups.

The National Cancer Institute is now extending its research on exfoliative cytology to early cancer of other organs, such as the lung, bladder, and large bowel. With respect to vaginal cytology, we are interested in getting answers to many questions that are still raised by our experience and by practicing physicians. There are insufficient data, for example, to indicate the exact relationship of carcinoma-in-situ to invasive cancer; that is, whether the initial lesion invariably progresses to invasive cancer. We are also interested in the incidence of carcinoma-in-situ by age, the average duration of the tumor, and the average age of occurrence of invasive cancer.

Practicing physicians are especially interested in how often women must receive this test in order to detect the earliest stages of invasive cervical cancer. We do not have the answer to this question; but from the research point of view, we are attempting to secure tests on study subjects at least once a year. We hope to have some reliable information in answer to this question from the research now under way. An important part of each study is continued improvement of techniques in the preparation and screening of specimens.

At the present time, early detection of cancer offers the best hope for effective use of the improved methods of treatment now available. We hope, therefore, that exfoliative cytology will obtain very widespread use in medical practice, not only



to detect cervical cancer but also cancer of other sites. Any such wide application of cytology will give local programs, like the tumor clinic operated by the county medical society in Texarkana and the cancer clinics in various hospitals, new opportunities to attack this major cause of death through services to physicians in your communities.

#### COMMUNITY FACILITIES AND HEALTH SERVICES

Future progress in medicine and public health depends upon such community services emerging from new scientific findings. The community, however, must have facilities necessary for health protection and medical care.

The Public Health Service has been assisting in the development of hospitals and health facilities for the past eleven years, through the Hill-Burton program. Each State has a different set of problems; each State, each community has to work out its own program and its own destiny in the provision of hospitals and medical facilities and health centers and services. Our programs of Federal aid take these facts fully into account. In addition to financial grants, the Public Health Service provides technical assistance to the States in various ways.

Arkansas was one of the first States to develop its hospital survey and construction program under the Hill-Burton Act. Since 1947 more than 2,700 hospital beds have been constructed in this State with Federal aid, and an additional 500 are in process of construction. At the close of 1957, Arkansas had met 64 percent of its general hospital needs; had balanced its books on tuberculosis; and had made improvements in its mental hospital facilities.

The decade just past has brought about striking changes in hospital care, as well as in methods of dealing with tuberculosis and many mental patients. A shorter stay in general hospitals is now the experience of the majority of patients with acute illness, as well as the tuberculous and mentally ill. Isoniazid for the treatment of tuberculosis and the group of tranquilizing drugs for certain mental

disorders have made it possible to place many of these patients in the care of their personal physicians in their own communities, after a short period of sanatorium or mental hospital care.

At the same time, increasing numbers of patients with chronic disorders, especially the elderly, are requiring long-term care in some institution. As a rule, the community general hospital is called upon to provide beds for elderly patients long past the time when they need or can benefit from the full-scale facilities and services a general hospital administers. Dr. Walter L. Portteus of Franklin, Indiana, told me recently that two-thirds of the patients remaining 30 days or longer in their community hospital, which serves a county of 35,000 population, were over 65 years of age. Dr. Portteus and his medical colleagues were concerned about ways to free some of the beds occupied by patients requiring less costly types of service, so as to have enough beds for the acutely ill without burdening the community with the high costs of constructing and operating additional general hospital facilities.

Medical, public health, and hospital authorities are becoming increasingly concerned about such problems. They have been scrutinizing our entire American pattern of institutional construction and care. And they have been coming up with some very challenging suggestions and experiments that have in them the promise of better care for patients at less cost to the community. Among these are the well-equipped nursing home under hospital or medical auspices; diagnostic and treatment centers for ambulatory care; and community programs which provide supplementary services, such as nursing care, visiting physical therapists, and housekeeper services, for long-term patients under the care of their personal physicians in their own homes.

In States like Arkansas, with a predominantly rural population and a slow rate of urbanization and industrialization, the development of State-wide community health services with public health centers as the local facilities whence such services may radiate, offers an economical and efficient means of extending to practicing

physicians many of the newer types of service. From the very beginning of the Hill-Burton program, the role of less costly facilities was recognized. Provisions of the Act included the construction of public health centers and chronic disease hospitals. In 1954, the program was extended to provide aid in the survey and construction of diagnostic and treatment clinics, nursing homes and related facilities, and rehabilitation centers. Throughout this period, Federal assistance to the States has continued for the development of local health services and of new programs, such as chronic disease control, health of the aging, mental health, and accident prevention.

These contemporary public health problems exist in all parts of the country as evidenced by your programs for mental health, heart disease, and cancer detection, and by the Arkansas State Health Department's current interest in domestic explosions and fires, a frequent cause of fatal accidents in this part of the country. The Public Health Service is cooperating with Dr. Herron's staff in a study of these types of home accidents with the hope that preventive action can be taken.

In many rural states, however, the solution of the major public health problems depends upon the availability in local communities of enough young, well-qualified practicing physicians. I know that Dr. L. H. McDaniel, past-president of this Association and former chairman of the American Medical Association Section on General Practice, would concur with that observation. No physician in this State has done more to alert the profession and the community to this problem than he. And it is a serious problem for many isolated rural areas. Even with good highways and well-developed medical and hospital services in the larger centers of a State, we would agree that medical care should begin, continue, and end at home.

Do not the State Government and the citizens of the local communities have some responsibilities to the young physicians they would like to see settle in rural areas? Would it not be possible to include in a public health center some office space for low-cost rental to local physicians? What is there to prevent the organization of

local home nursing services for the practicing physician's chronic disease patients, as well as for maternal and child health programs?

Why could not a medical society set up a special committee on nursing homes with a view to bringing these institutions into the stream of modern medicine? Recent studies show that many patients in nursing homes do not receive adequate medical supervision. Could not public health departments help the administrators of such homes to maintain a safe and sanitary environment, satisfactory dietary service, and good quality nursing care?

I raise these questions because many physicians have expressed their concern about these problems. They have been under the impression that the Public Health Service was concerned only with the construction of additional general hospital beds and with the conduct of mass prevention programs. Nothing could be farther from the facts.

I have told my medical colleagues—and I repeat it here—that I would be delighted to see one—any one—community come up with a plan for improving its health services without building a single additional general hospital bed. The important thing is for the physicians and the community to get together with their own State authorities and plan exactly the type of facilities and services that will meet that community's particular needs. Those needs might include one or all of the following types of services: a diagnostic and treatment center for ambulatory care, to be used by the physician in cooperation with a nearby hospital and the university medical center; a nursing home or related type of facility for long-term patients who have already received the maximum benefit of hospital care; and a public health center to house the basic sanitation, nursing, vital statistics, and epidemiologic services of a health department.

Arkansas' plan for public health centers, for example, leaves nothing to be desired—except substantial implementation of the plan. It may be that Dr. McDaniel's dream of more young graduates of the Arkansas University Medical School practicing in rural areas could be



brought nearer to realization if you people in Arkansas would put a little more emphasis on local health centers and services. Both rural medical care and rural health services in this day and age require well-trained young people. There is a shortage of trained public health workers but many States have found that a small investment in training of public health personnel pays high dividends. In this connection, the Public Health Service is now administering a program through which more young physicians, engineers, nurses, and other professional workers may receive financial aid in obtaining postgraduate training in public health.

Local health centers have to be reasonably well staffed. Bricks and mortar alone will not attract or retain young physicians; there must be enough public health personnel around to give the practicing physicians and the communities adequate supplementary services. In South Carolina, for example, where the problems are not unlike those of Arkansas, there are now 98 public health centers in operation, in comparison with 17 in this State. And the ratio of State and local public health workers to population in South Carolina is about 23 per 100,000, as compared with 12.5 per 100,000 in Arkansas.

These are problems which I am certain medicine and public health can work out if the medical societies and the health agencies will sit down together and develop a mutually agreed upon plan. The respect in which the people of this country hold the medical and public health professions would ensure the mobilization of resources to implement such plans. Arkansas has come so far in making up its deficits in medical education and research, and in hospital facilities, that there is every reason to believe it can make

similar progress in rural medical and health services.

The mutual goal of medicine and public health, as I see it, is to reduce the needless loss of life and health which afflicts our communities and the families who turn to their physicians in sickness and in health. We in the Public Health Service are eager to do everything that our laws allow and our resources permit in helping the States and communities to carry out plans of their own making to that end.

The physicians of Arkansas know better than most other citizens of this State that the old chief causes of death are gone—or are easily combated. Dr. McDaniel gave a vivid picture of this change in his Chairman's Address to the Section on General Practice a few years ago. Where he had once seen 200 malaria patients a week, he now saw one every three years, he said; the Saturday afternoon pellagra clinics with their 50 to 60 patients have disappeared, leaving one patient every five years with pellagra in its mildest stages. Gone too, he pointed out, are typhoid fever, cholera infantum, and the tragic deaths from pneumonia and septicemia.

The Public Health Service and the Nation's State and local health departments played an honorable role as partners of medicine in the conquest of those by-gone scourges. I am confident that the same partnership will win the victory over the chronic diseases, mental illness, the crippling disorders and accidents which afflict so many of our people today. Let us then strive to perfect that relationship which will solve the mutual problems of medical practice and public health. As physicians, we can have no greater satisfaction than helping each other combat the suffering of mankind.

# The Significance of Hematuria §

HORACE V. MUNGER, M.D.†

The purpose of this paper is to discuss for the general practitioner the significance of hematuria. Attention will be directed to the many causes of this symptom both those resulting from intrinsic pathology in the urinary tract and to those resulting from abnormality elsewhere in the body. The significance of both gross and microscopic hematuria in connection with malignant disease of the urinary tract will be stressed. Emphasis is placed upon the importance of obtaining an accurate history in these patients which will provide four main items of information before definitive urologic investigation is accomplished. In addition to considering intrinsic lesions of the urinary tract from the viewpoint of pathology they will be divided into categories based upon their anatomic location within the urinary tract.

It is axiomatic among urologists that urinary tract cancer is to be considered the cause of hematuria until proven otherwise. This symptom is of great clinical importance because the majority of patients who suffer from urinary tract cancer have gross hematuria as the initial symptom of the disease.

In reviewing 1,000 consecutive patients who suffer from gross hematuria Lee and Davis (1) found that 22% had their bleeding as the result of urinary tract cancer. In our series of male patients we have determined that approximately 50% resulted from bleeding originating in the prostate gland. In our female patients we have found that 51% were the result of urinary tract infection which is a higher incidence than in the male.

Our chief concern today is with lesions of the urinary tract, therefore only brief discussion of extrinsic sources will be presented. Figure 1\* depicts in table form the causes of hematuria as originally presented by Higgins.(2) These extrinsic causes in general seem to limit themselves to the group of blood dyscrasias or diseases in which aberrations of the clotting mechanism occur, either as the

result of a pathologic process, or as the result of chemotherapeutic measures employed. The most frequently cited systemic causes of hematuria are: polycythemia; leukemia; purpura; Hodgkin's disease; hemophilia; and, hypoprothrombinemia following the administration of anticoagulants. It is well to remember that young adults and adolescents frequently show microscopic hematuria following heavy exercise or the ingestion of large amounts of protein.

Disease involving structures adjacent to the urinary tract such as diverticulitis of the colon, salpingitis, and appendicitis may produce hematuria. The microscopic hematuria which appears before, during or following an attack of acute appendicitis is usually considered to result from lymphatic transmission of the infection or from spread by contiguity to the ureter. This is a misconception. There is considerable evidence to support the thesis that microscopic hematuria found at the time of an attack of appendicitis results from an acute or subacute glomerulonephritis due to hematogenous spread of infection to one or both kidneys. Specimens of urine obtained from each kidney by ureter catheter will demonstrate an equal amount of blood in each; and the presence of blood both before, and for as long as two weeks after an attack of acute appendicitis again suggests that hematogenous spread to the kidneys occurs during the attack.

In determining the source of bleeding the history is of great significance, particularly as far as extrinsic causes are concerned. An exact description of the bleeding is of paramount importance and there are four things we particularly want to know. First, we want to know whether the bleeding is gross or microscopic. Second, we want to know whether the blood is dark or bright. If dark, the source is probably located above the bladder and not arterial in origin. Third, we want to know whether the bleeding is painless or painful, and, if painful, whether the pain occurred before or after the appearance of blood. If the bleeding is

§ Presented May 4, 1958, at the annual session of the Arkansas Medical Society, Hot Springs, Ark.

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\*A group of illustrations are deleted.



painless, one first suspects neoplasm as the cause. If pain follows the bleeding, it is probably due to the passage of clots; if it preceded the bleeding, the migration of a calculus is suspected. Fourth, we want to know whether the bleeding is initial, total, or terminal. If initial, attention is directed to the lower urinary tract; if total, attention is directed above the bladder neck; and, if terminal, lesions of the bladder neck area are suspected. If these details of history are obtained, the anatomical location of the source of bleeding is often determined prior to the employment of definitive diagnostic measures. Urography, cystoscopy, and retrograde pyelography should be undertaken only after the above information has been obtained, and after careful inspection and palpation have been accomplished.

Renal sources of hematuria obviously include both medical and surgical lesions. Since we are primarily concerned in this discussion with surgical lesions, it will suffice to mention that the nephritides, periarteritis nodosa, and hyperproteinemia are examples of medical conditions which may produce hematuria. Five of the more common surgical lesions of the kidney will be discussed from the standpoint of hematuria. The first of these is calculus disease. Figure 2 is an x-ray



Figure 2

\*A group of illustrations are deleted.

film revealing a stag-horn calculus. This occurred in a man in his fifth decade who suffered from a urea-splitting staphylococcus infection. Six months previous to his first examination he noticed blood in the urine but since it abated in one day the patient dismissed it as of being of no consequence. Some months later when pain developed in the side and he again had blood associated with it and in addition chills and fever he sought medical advice. At time of surgery this kidney was found to be beyond the point of salvage.

The next condition to be discussed is that of pyelonephritis. Figure 4 is a retrograde pyelogram depicting the end result of long standing pyelonephritis name-



Figure 4

ly, pyelonephritic atrophy and pyonephrosis. This kidney has been destroyed by back pressure and secondary infection. It is interesting to note that this 48 year-old woman had no complaints directing attention to this kidney until in the hospital while convalescent from cholecystectomy she developed acute infection directing attention to the kidney. Then in re-questioning the patient it was found that for a number of years she had recurrent episodes of left flank pain and periods of unexplained fever. At the onset of her acute left renal syndrome gross bleeding

from the kidney occurred. Figure 5\* is a photograph of the surgical specimen and it is quite apparent that almost total destruction of this kidney has occurred.

The third surgical condition to be discussed is that of renal tumor. Ninety per cent of renal tumors are malignant, and, of these, ninety per cent arise from the parenchyma, thus being tubular in origin. The remaining ten per cent arise from the pelvis and are papillary transitional cell or squamous cell carcinomas. The latter are remarkable for their extremely poor prognosis; no five-year cure of a squamous cell carcinoma of the renal pelvis has yet been reported.

Figure 6 is a retrograde pyelogram of a 41-year-old patient who had total, gross, dark, painless hematuria at one voiding



Figure 6

six months earlier, and, who came for advice after a similar episode two days previously. Notice the marked displacement and encroachment of the calices. This represents distortion due to clear cell renal cortical carcinoma.

Figure 8\* demonstrates the surface of the tumor as seen after the specimen has been opened and is shown to demonstrate the typical clear yellow color of these tumors and to again emphasize the close association with the venous system.

Figure 9\* is an x-ray of this same patient's chest six months later demonstrat-

ing severe pulmonary metastases. This figure is shown to re-emphasize the point that six months delay occurred after this patient first had gross, total, painless hematuria. It was obvious at the time of surgery when involvement of the renal vein was noted that prognosis was extremely poor.



Figure 10

Figure 10 is a retrograde study attempted in a 50-year-old woman who complained of total, gross, dark, hematuria followed by right-sided colic. Her bleeding began several weeks before, but only after the bleeding had recurred and secondary clot colic appeared did she seek advice. Note that the ureter is completely occluded and shows downward displacement. At operation a large papillary tumor of the renal pelvis was found. There was no evidence of extension of the tumor. Nephroureterectomy was accomplished and seven years later this patient shows no evidence of metastases. However, during this seven year period she has had the appearance of small papillary non-invasive transitional cell carcinomas of the bladder on five occasions. Each tumor was treated by transurethral excision and electro-coagulation of the base. Figure 11\* demonstrates the surgical specimen.

\*A group of illustrations are deleted.



The fourth surgical condition to be discussed is renal tuberculosis. As a result of therapy with streptomycin, para-aminosalicylic acid and isoniazid we see considerably less renal tuberculosis. When it does occur, operative risk and post-operative convalescence have been materially reduced by the prior judicious use of these drugs. It should be mentioned, that chemotherapy has served only to aid the surgical treatment of renal tuberculosis and has not supplanted it.



Figure 12

Figure 12 is a retrograde pyelogram on a 26-year-old male who stated that he was suffering from tuberculosis of the urinary tract. This patient was a laboratory technician and gave the history of having had pulmonary tuberculosis two years previously and of having had hematuria with frequency and dysuria for 48 hours. The retrograde pyeloureterogram substantiated the patient's diagnosis, the x-ray clearly shows the rigid, beaded ureter typical of tuberculosis and the puddling effect of the contrast media which results from cavitation.

The last surgical condition to be discussed is the group of anomalies and for purposes of demonstration these will in-

clude polycystic disease, solitary cysts of the kidney and duplication anomaly only.

Figure 14\* is a bilateral retrograde pyelogram demonstrating the spider-leg effect of the infundibuli and calices produced by these many cysts. This is often a familial disorder and is slowly progressive so that we find it, as a source of gross hematuria in elderly persons. Frequently these patients have microscopic hematuria which most usually is bilateral in origin. This disease is always bilateral, and, during its protracted course, the kidneys may obtain an enormous size. Occasionally parenchymal tumors occur in these kidneys; therefore re-evaluation is in order when gross bleeding occurs. Figure 15\* is a photograph of an autopsy specimen demonstrating the tremendous number of cysts which polycystic kidneys may exhibit.

The second anomalous condition to be considered is that of solitary cyst. These lesions are often difficult to differentiate from renal cortical tumors and especially so when they produce hematuria. It is well to remember also that carcinoma can occur in solitary cysts as well as occurring in the parenchyma of polycystic kidneys. Figure 16 is a retrograde pyelogram demonstrating upward displacement of the calices by a large homogeneous mass of the lower pole of the kid-



Figure 16

\*A group of illustrations are deleted.

ney. This mass is of uniform consistency. Does not show any calcium flecking which often is seen in parenchymal tumor and is quite typical of the pyelogram seen with a solitary cyst. This patient was a 45-year-old white male who presented himself for examination because at the time of a life insurance examination he was told he had red blood cells in his urine. Physical examination revealed a palpable mass, the presence of microscopic hematuria was confirmed and the lesion treated by excision of the cyst with conservation of the kidney.

Figure 17\* is a combined retrograde pyelogram and perirenal oxygen insufflation done to better outline the kidney because the excretory urogram showed an ill defined central defect. This study was accomplished because the patient had experienced a gross, dark, painless hematuria. Figure 18\* is a lateral film; it is shown to demonstrate the central defect more clearly. This cyst was also excised thus salvaging a useful kidney.

The last of the anomalies to be showed is that of duplication. This young patient was examined because of the finding of both pus and blood in the urine. Cystoscopic examination revealed two ureteral orifices on the right side with bloody urine appearing from the upper of the two orifices. The retrograde study demonstrates a complete duplication of the right tract with obstruction of the lower segment resulting from pressure from the ureter of the upper segment. Heminephroureterectomy was accomplished leaving a large segment of functioning kidney with its ureter intact.

Ureteral sources of hematuria are relatively few. In this region, calculi, ureteral tumor and less frequently ureteral stricture and ureteritis are the chief causes of hematuria.

Figure 20\* is an x-ray film showing a moderate sized apparently innocuous calculus lying in the upper segment of the ureter. This film is shown because this stone had been noted at this same level on repeated x-ray examinations by the patient's local physician, for several weeks. She was acutely ill when admitted to the hospital at which time grossly bloody urine was obtained. There was marked

elevation of the temperature and the patient was prostrated. Ureterolithotomy was instituted without delay. Ureteral decubitus with extravasation of urine had already resulted necessitating the excision of a necrotic segment of ureter and reanastomosis over a splinting T tube. This case is presented to emphasize the importance of instituting immediate definitive measures when the patient with a long standing calculus of this type suddenly becomes acutely ill.

Localized inflammatory reactions of the ureter can result from intrinsic ureteral pathology as well as from extra ureteral causes. Figure 21\* is a retrograde study which demonstrates a diverticulum of the lower portion of the ureter. This patient complained of lower left quadrant pain and of gross, dark blood in the urine. At cystoscopic examination blood could be seen to efflux from the left ureteral orifice; when the catheter was advanced through the intramural portion of the ureter bloody drainage was obtained from the catheter. As the catheter was advanced up the ureter the drainage became clear, since the tip of the catheter had advanced beyond the diseased area. The ureteral diverticulum was excised and uretero-neocystostomy accomplished.

Figure 22 demonstrates a strictured ureter with considerable abnormality in its course. This shows the damage which can accrue to a ureter secondary to an appendiceal abscess. This young white male was referred for urologic investigation because of right sided pain and microscopic hematuria. One year previously he had been operated on for a ruptured appendix. Following this surgery he was symptom free for three months but then developed constant right flank pain. When he finally sought medical advice hematuria was found and urological examination advised. He recovered following mobilization of the ureter which was found to be compressed by dense, scar tissue.

Papillary carcinoma of the ureter may be of multicentric origin and is the same type of transitional cell carcinoma as seen in the papillary tumor of the renal pelvis and urinary bladder. Figure 23 is a ureterogram demonstrating the fusi-

\*A group of illustrations are deleted.



form appearance of the lower end of the ureter at the site of tumor. This 55-year-old housewife had total, dark, gross, painless hematuria two days prior to her first examination. Nephroureterectomy was accomplished followed by deep x-ray therapy. Figure 24\* is a photograph of the surgical specimen revealing the increase in the size of the ureter as depicted by the ureterogram.

Bleeding which occurs from the urinary bladder most frequently results from infection; next most frequently from



Figure 23

bladder carcinoma. In our series of bladder carcinomas we find that 75% of the patients had gross, total hematuria as the initial complaint.

Figure 25 is a cystogram of a 67-year-old man who experienced total, bright, hematuria recurrently many times over a period of 15 months prior to seeking advice. Since this man had been known to have progressive prostatic obstruction for a considerable number of months his physician had attributed the bleeding to the evident prostatic hypertrophy. When the patient bled very profusely urological advice was sought. This cystogram demonstrates marked displacement of the bladder both by a large prostatic hypertrophy which has produced the trabecula-



Figure 25

tion you see and demonstrates also a large irregular diverticulum. In the latter was a massive papillary carcinoma which at diverticulectomy was found to have invaded the wall, to involve the regional lymph nodes and to have invaded the recto-sigmoid. This is the time to emphasize the point that bladder carcinoma accounts for 50% of the cases of gross, total, hematuria found in men over 40 years of age. Figure 26\* demonstrates the surgical specimen and shows the orifice of the diverticulum surrounded by a mass of infiltrating transitional cell papillary carcinoma.

Vesical calculi often occur as the result of bladder neck obstruction. Following pressure and secondary infection, hematuria frequently results and is usually accompanied by frequency and dysuria. Figure 27 is an x-ray film demonstrating a large, round, calculus in the bladder in a 60-year-old man who presented himself for examination not because of his nocturia and story of progressive bladder neck obstruction but because of gross, total, hematuria occurring the day before. Any foreign body in the bladder whether it be calculus or otherwise produces irritation of the mucous membrane which results in secondary infection and may cause hematuria.

\*A group of illustrations are deleted.

## THE SIGNIFICANCE OF HEMATURIA

Figure 28 demonstrates a foreign body in the bladder in a 20-year-old girl who presented herself to her local physician



Figure 27



Figure 28

because of dysuria and gross hematuria. The history obtained from this patient was that two weeks prior to admission she had been sitting, tailor fashion, on the floor writing a letter to her boy friend. It was difficult to tell just what happened next but the patient stated she thought the pen had slipped. We never did determine whether or not the letter was finished. It may well have been finished at a later date since the pen was extracted cystoscopically and returned to the patient.

When hematuria is initial, lesions of the urethra are suspected.

### SUMMARY

The significance of hematuria has been stated. Both extrinsic and intrinsic urinary tract causes have been demonstrated. It is re-emphasized that gross hematuria is not a constant symptom, that microscopic hematuria is present for longer periods and is of equal significance. It is stressed that gross or microscopic hematuria demands immediate investigation. It is again brought to your attention that hematuria frequently is the initial symptom of cancer of the urinary tract.

In closing I want to quote from my old teacher, Meredith Campbell, (3) "Even today many physicians fail to appreciate the potentially grave significance of hematuria, and sometimes the opportunity to save a life is thereby lost."

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# ◆ *What's* NEW ◆

## Surgery in Carcinoma of the Parotid Gland

G. GRIMSLEY GRAHAM, M.D.\*

For many years there has been much controversy over benign and malignant tumors of the parotid gland. Much of this confusion arose over the high rate of recurrence (30-40%), (1) of the benign mixed tumors. It is now well known that this high recurrence rate is due to inadequate surgical removal, primarily from fear of injuring the facial nerve. Mixed tumors are not multicentric but recur or persist because of incomplete removal of "seeding" at the time of surgery. Inadequate removal also alters the malignancy rate as observed by Buxton (2) and his associates in that "aging" of the tumor, is of greater importance in malignant transformation than is repeated surgical trauma. The proven carcinomas still present a problem due to the difficulty of an accurate histological diagnosis, especially on frozen sections and the added decision of whether to salvage or sacrifice the facial nerve.

Clinically, carcinoma of the parotid gland presents itself as a tumor, which is usually fixed to the skin, deep structures and bone. The growth is usually rapid. The peak incidence is during the fifth decade. (3) Pain is invariably present and the facial nerve will be involved to some degree in a third of the cases. Metastasis is common to cervical lymph nodes, lung and bones.

Malignant tumors of the parotid gland are fewer in number than the benign ones. The relative proportion according to Kirklin (4) is about 3.5 to 1. Malignant tumors of the parotid gland are usually classified as follows (5):

1. Adenocarcinoma (cylindroma type)
2. Mucoepidermoid carcinoma
3. Papillary adenocarcinoma

4. Epidermoid carcinoma

5. Carcinoma, undifferentiated type

Adenocarcinoma or cylindroma type is the tumor that is most often termed the "malignant mixed" tumor. These particular tumors have an affinity for the seventh nerve and will involve it early. Distant metastasis to the lungs without clinical manifestation is not uncommon. The approximate five year survival is 75%.

Mucoepidermoid carcinoma: This is a relatively slow growing tumor and is often confused with a benign tumor histologically. It does have the ability to metastasize and local recurrence is not uncommon in the inadequately resected cases. The approximate five years survival is 85%.

Papillary Adenocarcinoma: One of the rarer carcinomas, but one of the most malignant. It is characterized by early metastasis, necrosis and hemorrhage. The five year survival is approximately 40%.

Epidermoid Carcinoma: Probably arises from metaplasia of the duct epithelium. The five year survival is approximately 58%.

Carcinoma, Undifferentiated Type: These are rapidly growing and early metastasizing tumors with the poorest prognosis of all, with an average 30% five year survival.

Parotid tumor and facial nerve are thought of as one, for the damaged or sacrificed seventh nerve is a distressing complication for both the surgeon and the patient. Obviously, no surgeon wishes to sacrifice the nerve, yet adequate extirpative surgery for this malignancy will often require its deliberate sacrifice. Martin and Helsper (6) in a report of 150 consecutive cases, had deliberately

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sacrificed the seventh nerve in approximately one-third of the cases.

Thorough understanding and knowledge of the anatomy of the seventh nerve and its relation to the parotid gland is absolutely imperative in any parotid surgery. No attempt will be made to go into the detailed anatomy other than to summarize Bailey's (7) description. There is a large superficial lobe and a deep lobe of varying size, these are connected by an isthmus. The main trunk of the facial nerve, after emerging from the stylomastoid foramen is approximately 1.75 cm. in length and 1-2 cm. medial to the mastoid process and 1 cm. superior to its tip. The nerve then passes deep to the superior lobe just below its middle and lies on the under surface where it ramifies. Most tumors displace some of the nerve branches, whether benign or malignant. An excellent description of the anatomy and its surgical application can be found in Beahrs and Adsons (8) publication. Bruzelius et al. (9) reported an 8% incidence of persistent facial paralysis in the treatment of benign tumors of the parotid gland, their treatment consisting of pre-operative irradiation and surgery as advocated by Ahlbom (10).

Operable malignant tumors should have radical treatment, total parotidectomy, sacrifice of facial nerve when indicated and radical neck dissection to be followed by postoperative x-ray therapy. It is well to note Marshall's (1) observation that radical surgery is of no avail when the tumor arises in the pharyngeal prolongation of the parotid gland. The patient should be forewarned in all parotid surgery cases of transient paresis due to stretching, stimulation and trauma.

Once permanent facial paresis has occurred, there are several acceptable facial rehabilitation procedures that can be accomplished. This will require a well-trained plastic surgeon and early consultation with this colleague is needed in order to plan reconstruction. Until definitive surgical intervention is instituted, every effort must be made to maintain muscle tone in the affected side. This can be done by selective galvanic stimulation and bimanual massage of the cheek. A brief

summary of the facial rehabilitation techniques are (11):

1. Facial suspension: Probably the least satisfactory, as the affected side of the face is completely paralyzed and lacks any intrinsic muscular activity.

2. Muscle Rotations: By transposition of the temporalis and masseter muscles into the region of the oral commissure and lips. This gives movement on mastication.

3. Facial Balance: To overcome the imbalance of the excessive contractions of the unaffected side, resection of 1 cm. of each of the muscles in the responsible group.

4. Nerve Repair: If the facial nerve has been sectioned or a small part resected, an attempt of reapproximation with silk suture is indicated.

5. Nerve Grafts: Using a portion of the great auricular nerve as a graft has met with some success. This usually requires from six to eighteen months for regeneration.

Martin and Helsper (6) reported spontaneous return of function of the facial nerve in seven to twenty-eight cases in which deliberate sacrifice of the nerve was done for carcinoma. The length of the nerve resection varied from 2.5 cm. to 5 cm. of the main trunk. There was spontaneous return of function between six and twenty-one months. The first evidence of motion was the ability to voluntarily pull back the edge of the mouth. Once initiated, there was progressive and steady improvement in the degree and extent of recovery. They felt this return of function was due to the growth of motor fibers through the fifth cranial nerve to anastomose with the seventh nerve and then to the involved muscles.

#### SUMMARY

1. Malignant tumors of the parotid gland constitute one-third of the tumors of the parotid gland and according to histological type have from 30% to 85% five year survival following adequate surgery.

2. Total parotidectomy, radical neck dissection and postoperative irradiation



is the indicated treatment for carcinoma of the parotid gland. It is necessary to sacrifice the seventh nerve in one-third to one-half of the cases.

3. Facial rehabilitation can be obtained with some degree of success following permanent facial paresis.

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# A TEACHING SEMINAR

## FROM THE

### UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE\*

## Acute Amebic Colitis

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Since acute amebic colitis is seen frequently in Arkansas, physicians practicing in this state should be familiar with the clinical picture of this disease. Acute amebic colitis is an infection of the colon with *Endamoeba histolytica* with production of ulcerations and usually accompanied by symptoms of diarrhea and cramping abdominal pain. In this seminar the clinical picture and methods of diagnosis and treatment of acute amebic colitis will be discussed.

### EPIDEMIOLOGY

During the past thirty months 41 cases of acute amebiasis have been seen at the University of Arkansas Medical Center and the Veterans Administration Hospital in Little Rock. It should be noted that these were *acute* symptomatic cases with dysentery, and not merely "carriers". Although the carrier rate for Arkansas is not known, it probably approaches 10 percent, the figure found in surveys of other southern states.

In Figure 1 the counties from which the 41 patients with acute amebiasis came are indicated. At first it appeared that acute amebiasis was more prevalent in the portion of Arkansas bordering the Mississippi River. However, an analysis of the county source of patients seen at the Medical Center showed a similar distribution. Therefore there was no evidence that amebiasis was more prevalent in any particular portion of the state.

Although epidemics of amebiasis have occurred from connection of sewer pipes to water pipes by mistake or by fly-borne contamination of food, usually amebiasis is endemic. Surprisingly, mul-

tiple cases occurring within families is not striking. More commonly only one member of a family is found to be infected. The source for most amebic infections is believed to be contaminated well water or contaminated vegetables which are eaten in the raw state. Almost without exception the patients seen in this study had a well, an outhouse or both.

### CLINICAL PICTURE

The patient with acute amebic colitis usually gives a history of intermittent episodes of diarrhea, although the course can be acute and fulminating. Generally the host-parasite relationship achieves more or less of a balance with only occasional episodes of diarrhea. The diarrhea may last several days to a week or so, then disappearing for periods of weeks or months. Constipation may be complained of after the diarrhea stops. If the host acquires an acute illness of some sort the host-parasite balance may be disturbed, resulting in activation of the amebiasis with production of ulceration and diarrhea. Chronic debilitating illnesses also may activate the amebiasis. When the process is an intestinal tract disease, such as carcinoma of the colon, a difficult diagnostic problem may occur. Sometimes acute bacterial diarrheas may be responsible for activation of amebiasis. For this reason, identification of a bacterial source for a diarrhea does not exclude the possibility that amebiasis also may be present.

Since the diarrhea is caused by amebic ulcerations in the colon, the liquid bowel movements almost always contain blood-streaked mucus. In a few instances the stools may be grossly bloody, resulting in significant blood loss. Therefore a history of intermittent diarrhea with

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blood-streaked mucus in the stool should alert the physician to the possibility of amebic colitis.

Although diarrhea is the most significant symptom associated with acute amebic colitis, the patient also may complain of cramping lower abdominal pain and tenderness. Rarely the patient gives no history of diarrhea. Other symptoms are non-specific, although on occasion weight loss can be very marked, suggesting a malignant process. Moderate degrees of fever and symptoms of severe anemia also have been seen.

Usually the physical examination is not remarkable except for mild abdominal tenderness and presence of hemorrhoids if the diarrhea is chronic. In a few instances marked abdominal tenderness with guarding can occur. Evidence of weight loss and anemia may be present. If an ameboma has formed, an abdominal mass may be felt.

Sigmoidoscopic examination may be normal during a period without diarrhea. During an episode of diarrhea ulcerations usually can be found in the rectum. However, it must be remembered that a significant portion of patients will have ulcerations only *above* the portion of colon which can be visualized by sigmoidoscopy.

Therefore absence of rectal ulcerations does not exclude the possibility of acute amebic colitis. When typical, the sigmoidoscopic picture is that of small punctate ulcerations varying from pinpoint size to 1 cm. in diameter with normal mucosa about the ulcer. Although the punctate appearance of the ulcers with normal intervening mucosa differentiates the picture from idiopathic ulcerative colitis, in severe chronic cases of amebic colitis the ulcerations may become very large, irregular and confluent with the entire rectal mucosa becoming edematous and inflamed. In the latter instance the picture is typical of that seen in ulcerative colitis, and the diagnosis of amebiasis may not be considered. Therefore amebiasis always must be excluded by repeated stool examination before a diagnosis of idiopathic ulcerative colitis is accepted.

Routine laboratory data rarely are altered. In a few instances there may be mild leukocytosis and eosinophilia. In several patients anemia in the range of 5 or 6 grams occurred.

#### DIAGNOSIS

Although the typical sigmoidoscopic picture is strongly suggestive of amebiasis, demonstration of the organism is es-

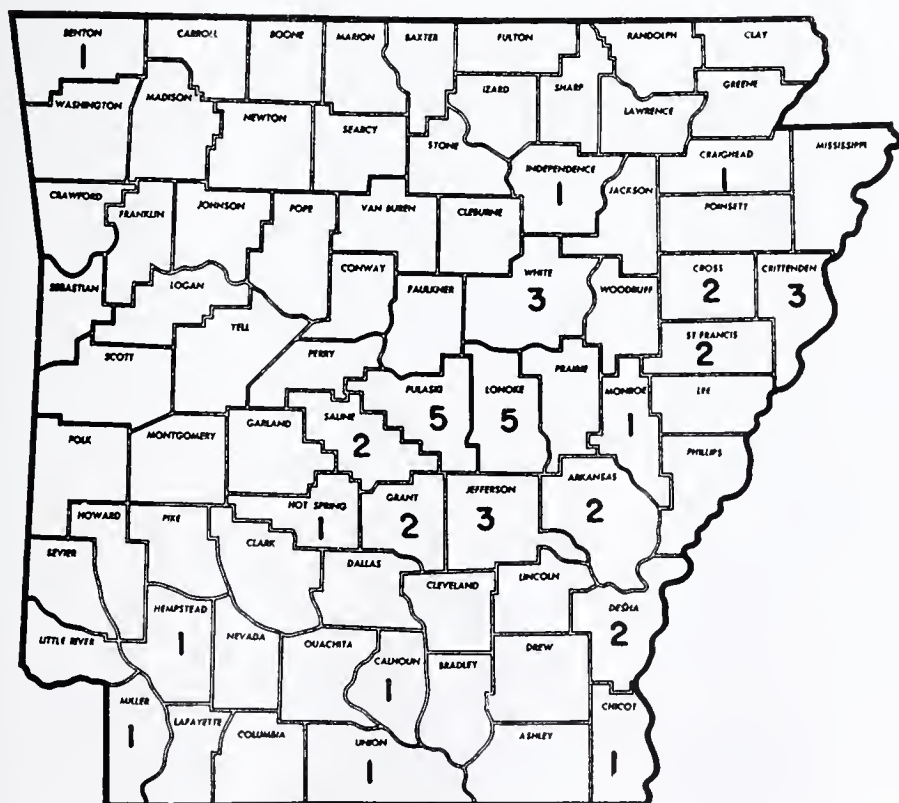


Figure 1

This county map of Arkansas shows the number of cases of acute amebic colitis from each county seen at the University of Arkansas Medical Center and the Veterans Administration Hospital in Little Rock during the past 30 months.

sential for confirmation of the diagnosis. If the patient is seen during a period when his stools are formed, then the stool must be examined for cysts. Most physicians depend on the laboratory for identification of cysts. If the patient is seen at a time when he is having diarrhea, then trophozoites usually can be found in the stool. In this instance the physician can identify the trophozoites himself with little difficulty when the trophozoites are typical. If the trophozoites are not typical, then a staining procedure should be restored to for identification.

Identification of cysts will not be discussed. Trophozoites of *E. histolytica*, when typical, show a rapid slug-like movement which is described as purposeful or directional. In addition, the trophozoites almost always contain red blood cells when active ulceration of the colon is present. Therefore the two criteria for identification of trophozoites of *E. Histolytica* are presence of typical motility and ingested red blood cells. If both of these features are present the physician can be certain that he is dealing with *Endamoeba histolytica*. Other cells, such as macrophages, may show slow motility and contain ingested red blood cells. Therefore presence of ingested red blood cells without typical motility does not identify a trophozoite as *E. histolytica*. Although a trophozoite showing typical motility but not containing ingested red blood cells probably is *E. histolytica*, caution should be used in identification of such a trophozoite. Red blood cells should be present in some of the trophozoites if they are responsible for the diarrhea.

Since many patients are seen by the physician at a time when they are having diarrhea, it is practical for the physician to look for the trophozoites himself. This is the quickest way to make the diagnosis of diarrhea due to amebiasis. In fact, the results are much better when the physician concerned with the patient does the examination for trophozoites himself. In this way problems of obtaining and transporting specimens to the laboratory are controlled better.

Certain considerations are essential before obtaining specimens for examination. The physician must be certain

that nothing has been done which might obscure demonstration of amebae. The following substances have been reported to distort or reduce the numbers of amebae present in the stool: barium sulfate used for x-ray procedures, bismuth or kaolin preparations used in treatment of diarrhea, drugs containing heavy metals, antibiotics and drugs containing sulfa radicals. If any of these substances have been given to the patient within 7 to 10 days of the time of the stool examination, inability to demonstrate amebae in the stool or in rectal lesions does not constitute an adequate examination for amebae. The patient must be re-examined at a later date. For the above reasons, x-ray examinations of the intestinal tract never should be done before examination of the stool when diarrhea is being studied. In addition, only anticholinergics, paregoric or deodorized tincture of opium should be used to control diarrhea until adequate stool studies have been performed. If any of the above offending substances have been administered, the substance should be discontinued for a period of 7 to 10 days before further stool examinations are attempted.

The physician must be certain that a stool specimen of the proper consistency is submitted for examination for cysts or trophozoites. Liquid stools are most likely to contain trophozoites, which disappear rapidly on standing. Liquid specimens also can contain cysts, but formed stools rarely contain trophozoites. Mushy stools often contain both trophozoites and cysts. If trophozoites are to be demonstrated, the specimen must be collected separately from any urine passed, and the specimen must be examined immediately before the trophozoites die. This difficulty is not encountered in examining for cysts since they can be found in stool specimens several days old. Since proper handling of the specimen is crucial in demonstration of trophozoites, these difficulties are controlled better when the physician looks for trophozoites himself.

Material for examination can be obtained at the time of sigmoidoscopy, or by collecting passed stool. Sigmoidoscopy is a useful procedure for routine study of diarrhea. Not only can the rectal mu-



cosa be inspected for lesions, but also excellent material can be obtained for culture for bacterial pathogens and for examination for amebae. If the patient has been having diarrhea, no preparation is desirable or needed. Enemas merely wash out the exudate and residual fecal material in which the amebae can be found. In addition, enemas destroy trophozoites and cause mucosal changes which are difficult to interpret. If an enema is necessary, only a normal saline solution should be used.

If ulcerations are seen during sigmoidoscopy, a little material should be scraped from the base of an ulcer for examination. A 1 cc. serological pipet with rubber bulb, a biopsy forceps, a curette or a cotton-tipped applicator soaked in normal saline solution should be used to obtain the specimen. If no lesions are seen, then a small amount of liquid fecal material usually can be obtained from the rectal vault for examination. In acute amebic colitis trophozoites usually can be found in properly obtained specimens if nothing has been done to the patient to obscure the picture.

Freshly passed liquid or mushy stool also is excellent material to examine for trophozoites. Fragments of blood-streaked mucus are particularly likely to contain amebae and should be selected for examination. If the patient is not having diarrhea, liquid stool may be obtained for examination for trophozoites by administering orally 2 ounces of Fleet's Phospho-Soda Solution. This will produce diarrhea in 2 to 3 hours. After the colon is emptied, sigmoidoscopy can be performed if desired. This method of preparing a patient for sigmoidoscopy is more desirable than use of enemas if amebiasis is to be excluded.

Stool specimens should not be warmed artificially for transportation to another area for microscopic examination. This only delays the procedure and warming can shorten the life of the trophozoite or even kill it. If the specimen cannot be examined immediately for trophozoites, the stool should be refrigerated, and not warmed, until examination or culture for amebae can be done. However, there is no excuse for delay in examining for tro-

phozoites, especially if the physician does the examining.

Material obtained during sigmoidoscopy may require dilution with normal saline solution to make a preparation thin enough for rapid screening. Thick preparations are difficult to examine. A drop of the specimen and a drop of normal saline solution mixed well with a tooth pick or applicator stick will produce a thin specimen. This should be covered with a 22 x 40 or 22 x 50 mm. cover slip for examination. Any fragments of mucus or mucosa should be broken up during the mixing process. Excess fluid should be expressed from beneath the cover slip and the exuded drops absorbed with the cotton tip of the applicator. Fecal material may require dilution with several drops of normal saline solution to make a smear thin enough for screening. Tap water should not be used to dilute specimens since it destroys the trophozoites. Urine also will destroy trophozoites, so the patient must be instructed to collect any urine passed in a separate container.

If atypical trophozoites are seen in a fresh specimen, a staining technique is necessary for identification. Such staining should be done on fixed specimens. Material containing trophozoites can be fixed in the office quite simply with either Schaudinn's solution or a polyvinyl alcohol fixative. (1-2) Smears of mucus or fecal material are prepared on microscope slides and the slides immediately placed in Schaudinn's solution. Larger volumes of liquid specimens can be mixed with the polyvinyl alcohol fixative and kept in a stoppered vial until a smear of the sediment can be made for staining. Smears obtained by either method can be stained at a convenient time either in the office or at a laboratory. While short iron-hematoxylin staining methods have been most popular in the past, a Wheatley or Gomori trichrome staining technique (2-3) has proved quite adequate for diagnostic purposes. This latter staining method only requires 36 minutes and is practical enough for use in any laboratory. Prolonged iron-hematoxylin staining methods are not necessary for routine diagnosis. The use of preserved and stained material for confirmation of the

diagnosis of amebiasis is highly recommended. In this way material is available to support the diagnosis, and the slides can be sent to an expert parasitologist if there is any question about the diagnosis. The use of these fixative methods also eliminates the problem of transporting a fresh specimen to the laboratory while the trophozoites are still motile enough to identify — the staining eliminates the need for observing motility.

#### TREATMENT

Evaluation of the effectiveness of any drug in amebic infection is extremely difficult because the patient usually returns to the endemic area where he acquired the infection. Therefore it is impossible to be certain if a relapse or new infection has occurred. There is no evidence that infection with amebae produces any immunity to subsequent infections.

Five general types of drugs are used in treatment of amebiasis. None of these drugs are 100 per cent effective, and each type has certain advantages and disadvantages. The physician should select several drugs and become familiar in their use. The perfect drug for amebiasis is yet to be found.

I. *Emetine*. This drug is one of the alkaloids found in Ipecac, an extract of the root of a rhizome, Ipecacuanha, found in Brazil. This root was used in Europe in 1658 for treatment of dysentery. Emetine, the most potent amebicidal drug available, is very poorly absorbed from the intestinal tract and must be administered parenterally. The drug persists in the body for 40 to 60 days, so a cumulative action occurs. The drug is potentially toxic with little margin between the therapeutic and toxic doses. Emetine can cause myocarditis with a fall in blood pressure or cardiac arrest, muscular weakness, diarrhea and neuritis. Because of the cumulative effect and toxicity of this drug, emetine is never given for more than 7 to 10 days. The dose is limited to 1 grain daily intramuscularly or subcutaneously, and the patient is kept at bed rest during the therapy. Electrocardiograms should be made daily during the treatment in order to detect any serious toxic effect on the heart.

II. *Quinolones*. The efficacy of Chloroquine in treatment of malaria led to its trial as an amebicide. This drug is unique among the amebicidal agents since it is almost completely absorbed from the intestine, can be given orally and has a low toxicity. The drug is concentrated in the liver some 500 times above the plasma level. Because of the marked absorption from the intestinal tract, the concentration of this drug in the intestinal content is very low. Therefore Chloroquine is only 50 percent effective in eradicating amebae from the colon. On the other hand, this drug is very effective against amebae within the liver because of the marked concentration of chloroquine in that organ. The amebicidal activity in cultural studies is between that of emetine and carbarsone.

III. *Iodoquinolones*. Diodoquin, Chini-*ofon* (Yatren) and Vioform are several of the drugs in this group. It is believed that the amebicidal activity of these drugs is due to the quinolone radical rather than the iodine. These drugs are not absorbed from the intestinal tract, must be given orally and seem to be more effective in eradicating cysts than in treating acute ulceration.

IV. *Arsenicals*. This group includes Carbarsone, Milibis, Balarsen and others. These drugs also are poorly absorbed from the intestinal tract except for Balarsen. The drugs are given orally and a high concentration of drug occurs in the lumen of the colon. These drugs are very effective against acute ulceration of the colon. Since Balarsen is absorbed, this drug also may have some systemic action.

V. *Antibiotics*. A number of antibiotics have been shown to have value in treatment of amebic colitis. This includes Aureomycin, Terramycin, Erythromycin, Bacitracin and Fumagillin. These drugs appear to exert their effect on amebae at least partly by altering the bacterial content of the colon. Usually these drugs are given orally, but one of their chief advantages is that certain ones can be given parenterally if nausea and vomiting prevent oral medication. Terramycin and Aureomycin are the drugs which have been studied most. The



disadvantage of these drugs is their expense to the patient.

*Choice of drugs.* The clinical picture determines the drugs needed for treatment of amebiasis. Drug choice depends on 3 general needs: 1) control of acute dysentery, 2) elimination of acute or chronic intestinal infection, and 3) elimination of extra-intestinal infection.

1) *Control of acute dysentery.* Severe acute symptoms of dysentery, when life appears threatened, can be controlled most readily by Emetine. Bed rest and close supervision of the patient are essential when using this drug because of its potential toxicity. Emetine is used only long enough (usually 2 or 3 days) to control the severe symptoms, and not to eradicate the infection from the colon. As soon as the patient is out of danger, Emetine should be replaced by another drug. Emetine rarely is needed since most patients with amebic colitis are not that acutely ill. Arsenicals or antibiotics will control dysentery within 2 to 3 days. If the patient has nausea and vomiting, Terramycin or Aureomycin can be used effectively to control the acute infection. The antibiotics are particularly useful if secondary bacterial infection of the colon is present. Presence of fever and leukocytosis suggests the possibility of such secondary bacterial infection.

2) *Elimination of cysts from the colon.* Some of the drugs which appear to be effective in controlling the acute symptoms of amebiasis do not seem to eliminate the organism from the colon. In addition, the relatively high "relapse" rate of amebiasis makes the use of a second course of drug therapy desirable. The iodine-containing drugs have been thought to be particularly useful for elimination of cysts from the colon. If an arsenical drug was used for control of acute symptoms, then an iodine-containing drug can be given after the course of arsenical has been completed.

3) *Elimination of extra-intestinal infection.* The liver is the site most commonly involved because of the portal drainage of the intestine. Emetine, Chloroquine and Balarsen are the drugs available for treatment of liver involvement. Emetine and Chloroquine are par-

ticularly effective. Since Emetine is much more toxic than Chloroquine, usually Chloroquine is considered the drug of choice. There is some evidence that relapses will be higher with Chloroquine than Emetine, but a relapse with either drug can be treated with the drug which was not used originally. Since the liver often is involved in acute amebic colitis, it is wise to treat all patients with Chloroquine to prevent possible development of an amebic abscess of the liver. The low toxicity of Chloroquine permits its use routinely during the treatment of amebic colitis with arsenical and iodine-containing drugs. Involvement of organs other than liver, and perhaps lung, requires the use of Emetine.

Although any of the drugs listed in Groups 3-5 are adequate for therapy, the Medical Center has been using the following regimen for treatment of the average case of acute amebic colitis: Initial administration of an arsenical drug for 10 days, followed by administration of an iodoquinolone drug for 7 to 20 days. During the above therapy Chloroquine is administered concurrently for a total of 20 days. Thus 3 different drugs are used during the period of treatment, which extends over 4 weeks. Emetine or an antibiotic may be used for 2 or 3 days before arsenicals are begun if the patient is critically ill or vomiting.

Irrespective of the type of therapy, relapses tend to occur in about 1/3 of the patients. The usual criteria of cure are the continued absence of the parasite from the feces and absence of lesions in the rectum on sigmoidoscopic examination. Stool specimens should be examined 2 weeks after treatment on at least 3 occasions, and at repeated intervals over a period of 12 months or more. An occasional purged stool also should be examined for trophozoites and cysts.

#### DOSES OF DRUGS IN ADULTS

*Carbarsone* — 750 mg. orally daily in 3 divided doses for a period of 10 days. This drug is contraindicated in renal disease.

*Milibis* — 1500 mg. daily in 3 divided doses for a period of 7 days.

*Balarsen* — 10 mg./kg. of body weight up to 1000 mg. orally daily in a single dose for 5 days. This drug is contraindicated in pregnancy and renal disease.

*Aureomycin, Terramycin* — 2000 mg. daily orally or parenterally in 4 divided doses for 10 days.

*Bacitracin* — 80,000 units orally daily in divided doses for a period of 10 days.

*Fumagillin* — 30 to 60 mg. orally daily for 10 to 14 days in divided doses.

*Chiniofon* (Yatren) — 3000 mg. orally daily in 3 divided doses for a period of 7 days.

*Diodoquin* — 2000 mg. orally daily in 3 divided doses for a period of 20 days.

*Emetine* — 60 mg. daily subcutaneously or intramuscularly in 2 divided doses for 4 to 6 days. Toxic symptoms may appear several days after therapy is ceased.

*Chloroquine* (Aralen) — 1000 mg. daily for 2 days in divided doses orally, then 500 mg. daily in 2 divided doses for a period of 18 days.

#### SUMMARY

During the past thirty months 41 cases of acute amebic colitis have been seen at the University of Arkansas Medical Center and the Veterans Administration Hospital in Little Rock. Thus acute amebic colitis is an important disease in Arkansas. The disease appears to be acquired from contaminated well water or vegetables or from ingestion of dirt. The patient presents a picture of intermittent episodes of diarrhea with stools often containing blood-streaked mucus. On occasion weight loss and anemia are marked and stools can be grossly bloody. Demonstration of the organism, *Endamoeba histolytica*, in the stool or in material obtained from rectal lesions during sigmoidoscopy is essential for diagnosis. Demonstration of trophozoites is a procedure

which is practical, and probably most successful, when performed by the physician concerned with the care of the patient. Although amebiasis is present, amebae often cannot be found if certain substances have been given to the patient within 7 to 10 days of the examination. These offending substances include barium sulfate, bismuth and kaolin, arsenicals, other heavy metals, antibiotics and chemotherapeutic agents.

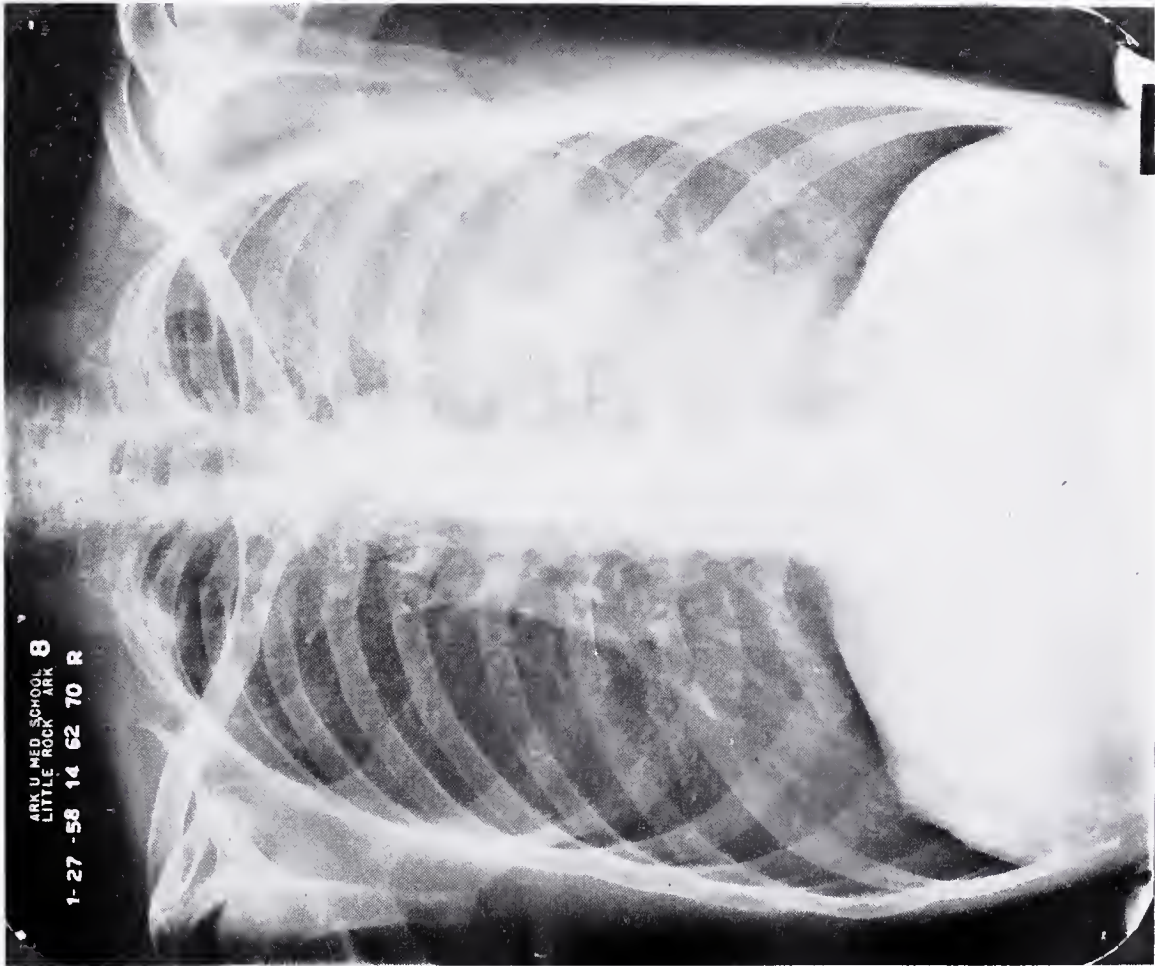
Simple fixation and staining techniques are available for diagnosis. These techniques are simple enough for use in any laboratory. Use of permanent stained material is highly recommended for diagnosis of amebiasis. The treatment recommended for the usual patient with acute amebic colitis is a 10 day course of Carbarsone followed by a 20 day course of Diodoquin. Concurrently with administration of these drugs, Chloroquine is given for a period of 20 days. If the patient is critically ill or vomiting, Emetine or an antibiotic can be given parenterally for 2 to 3 days until the acute symptoms are controlled. Then the patient is removed from these drugs and Carbarsone treatment started. Stool specimens should be examined at intervals over a period of 12 months or more to ascertain that a cure has been obtained.

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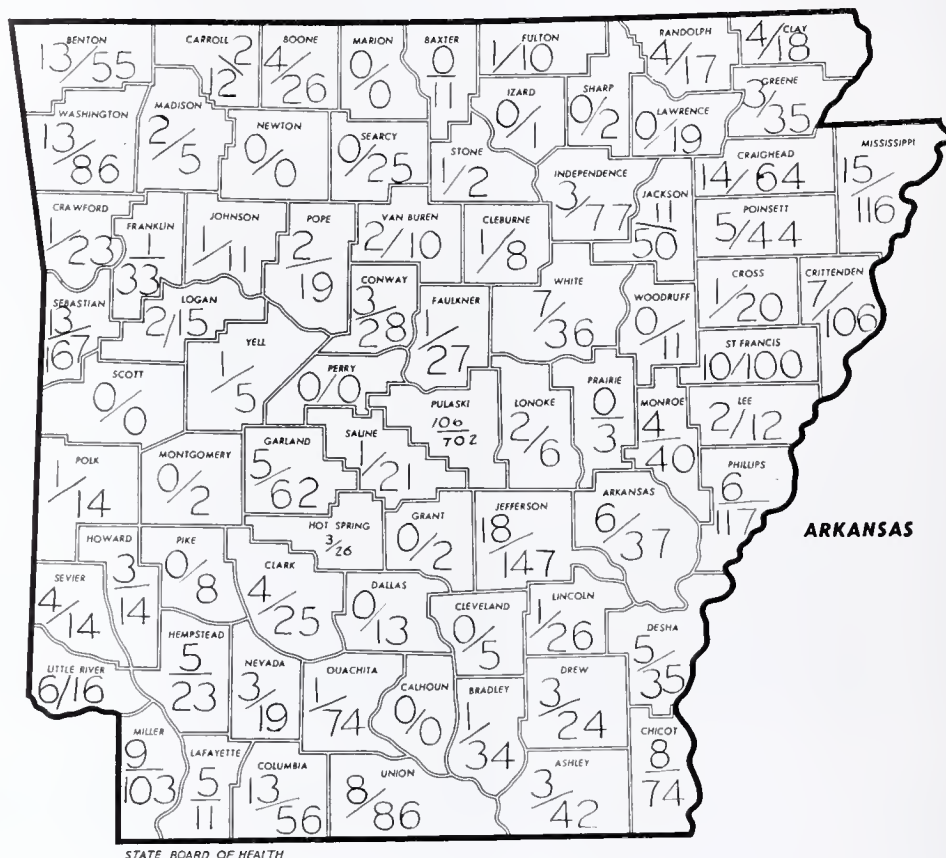
# What Is Your Diagnosis?



FOR ANSWER SEE PAGE 380

# Arkansas Public Health at a Glance

## PREMATURE BIRTHS AND NEONATAL DEATHS - 1957



TOTALS : 384 NEONATAL DEATHS  
3177 PREMATURE BIRTHS

In 1956 the neonatal death rate in the United States was 18.9 per one thousand live births, and in Arkansas was 16.5 per one thousand live births. Prematurity is one of the major childhood health problems in Arkansas, as it is in the United States as a whole. It is the leading cause of deaths in all infants under 1 year of age.

In Arkansas in 1957, there was a total of 671 neonatal deaths in 42,473 live births, giving a neonatal death rate of 15.8 per thousand live births. 384 of the neonatal deaths and 3,177 of the live births were in infants with a reported birth weight of 5 lbs. 8 oz. or less. Therefore, the neonatal mortality rate for prematures was 120.8 per thousand live premature births, or approximately one in

eight premature births resulted in neonatal death. When birth weight was 3 lbs. 5 oz. or less, 42.9% of the infants died in the neonatal period. When birth weight was 3 lbs. 6 oz. to 5 lbs., 8 oz., 6.2% of the infants died in the neonatal period.

While a major impact of prematurity is reflected in neonatal mortality, prematurity also is associated with an increased morbidity in terms of physical and mental retardation, cerebral palsy, and congenital anomalies. The total effect of prematurity is not measured by death rates.

The Maternal and Child Health Division of the Arkansas State Board of Health sponsors a home care program for prematures. This service is provided by local public health nurses under the med-



## FEATURES

ical direction of the private physician. Portable electric incubators and other essential articles for use in the home are provided by the MCH Division. These are taken to the home by the nurse who instructs the family in their use, demonstrates and instructs in aseptic technique, terminal sterilization, feeding technique, and general premature care. The nurse will follow the infant closely with frequent home visits and report to the physician.

Where home delivery is practiced, and where hospital care for prematures is not

provided, this service is very valuable. It also makes early discharge of prematures from expensive hospital care feasible, and allows for early supervised home care with all of the associated positive values of maternal care. In some instances a similar service for selected full term infants who need special supervision can be requested by the physician. When a premature is to be transferred to a hospital at some distance, the public health nurse has available premature carrying cases and can provide nursing care in transit.

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\*Sponsored by Arkansas State Board of Health.



## The Doctor's Interest in Inflation

R. B. ROBINS, M.D.\*

The inflation which is occurring in this country will have a tremendous impact on the character of our citizens, because it destroys the savings of people, it impoverishes those who are dependent upon pensions and insurance and it puts a tight squeeze on those who have to live on fixed incomes. Just think of what it does to the morale of people who have tried to provide for their own old age. It simply makes a mockery of thrift, of hard work and foresight in planning. It creates a constant fear of the future and destroys faith in the economy and the government.

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\*Camden, Ark.

It has a terrific impact on human values and basic morality, because when a man loses faith in his government and trust in his fellow man he tends to live more and more just for himself alone. This is the reason we should continue to fight strongly against socialism and government handouts which are great factors in producing inflation. Government grows bigger, taxes go higher and the economy heads down the dangerous road of inflation. We should alert our Congressmen and Senators that the new session of Congress will have many schemes of the "something-for-nothing" type presented and that many of these schemes will be of a medical nature.





## Medicine in the News

### Democratic Council Favors Forand: Congress Attitude Unknown

The Democratic Advisory Council, composed of party leaders mostly from outside Congress, favors a hospital-nursing home care program under social security, but there is no evidence that the top Democrats in Congress will go along with the idea. The Council recommended the step in a comprehensive manifesto, adopted at a Washington meeting to evaluate voter trends in the November election and chart a suggested course for the 86th Congress.

Hardly had the document been released when House Speaker Rayburn and Senate Leader Johnson let it be known that Democrats in Congress would formulate their own legislative program, and that it might not be a close parallel to the Council's report.

Prominent in Council discussions were Ex-President Truman and Adlai Stevenson, twice (1952 and 1956) defeated as Democratic presidential candidate. Presiding at the session was the Democratic National Chairman, Paul Butler. Present also were a number of governors and national committeemen. The Council was formed two years ago. Originally 10 members of Senate and House were appointed to the 20-man group, but with few exceptions they have either declined or been generally inactive.

To "insure a secure life for our people," the Council proposes that social security taxes be increased by one quarter of one per cent for employer and employee, and three-eighths of one per cent for the self-employed, with the money used to finance between 20 and 60 days of hospital care and "a limited amount" of nursing home care for the aged and other social security beneficiaries.

The council also would eliminate the age 50 limitation on disability payments, as "a disabled person is disabled whether he is 25, 40, or 50 years old." Also, it would have benefits increased 20% within the next three or four years, widow's bene-

fits boosted, and the earnings ceiling for OASI taxes moved up from \$4,800 to \$7,200 within two years.

In other health areas, the council urged more appropriations for hospital construction and "a steady effort" to increase funds for medical research.

### Medicare Contracts to be Re-Negotiated by Mail this Year

Because a "comprehensive examination and analysis" were made of fee schedules last year, and administrative costs no longer are an issue, this year's Medicare contracts will be re-negotiated by mail. Last year changes were worked out at a series of conferences. As in the past, extensions will be for one year.

### Medical School Consultants Active: Flemming Wants More Data

A recently-appointed consultants' committee to Surgeon General Burney on medical school problems already has two staff studies under way, on construction costs of the newer schools and on the financing of medical school operations. At its first meeting, the group named a steering committee to work with the staff between regular meetings. Composing it are Frank Bane, chairman of the 21-man consultant group; Dr. Edward L. Turner, American Medical Association; Dr. Ward Darley, Association of American Medical Colleges; Emory W. Morris, DDS, president of the W. K. Kellogg Foundation; and The Very Rev. Robert J. Slavin, president of Providence, R. I. College.

### AMA to Sponsor Three Medicolegal Meetings

**Chicago** — The American Medical Association announced that another series of three regional medicolegal conferences will be held next March and April as part of a continuing effort to create a better working relationship between lawyers and doctors.

Dates and locations for the conferences are: at the District of Columbia Medical Society headquarters, Washington, March 20-21; at the Hotel Cleveland, Cleveland, April 4-5, and at the Hotel Utah, Salt Lake City, April 18-19.

## Flemming Sees Medical Care For Aged as Basic Issue

HEW Secretary Flemming says the proposal for hospitalization and surgical services for social security beneficiaries is a basic issue facing the country today. He told another of his "listening" conferences that HEW had no position on the proposal by Rep. Aime Forand (D., R. I.) but that "unquestionably we will have to develop" a position looking to testimony before the House Ways and Means Committee. The conference was on social security, public assistance and child welfare.

## VA Prognosis

Six out of ten veteran patients hospitalized by the VA:

Five out of ten **non-service-connected** veterans in VA hospitals;

In thirty years, 24 thousand service-connected patients — and 305 thousand **non-service-connected** patients!

These are some of the statistics from "Current and Projected Veterans Patient Load through 1986," a study by the Veterans' Administration and the Bureau of the Budget, made with the assistance of the American Hospital Association and the Public Health Service, and released by the White House in June.

The total veteran patient load in all hospitals in the United States and Puerto Rico in June 1957 was 187,800 — 110,200 in hospitals under VA auspices. The total number of veterans hospitalized for **non-service-connected** disabilities was 148,800 — 71,200 in VA hospitals.

Predictions for future patient loads, at five-year intervals from 1961 to 1986, are based on age-prevalence analysis of the current patient-load. Today, for example, one out of every thirty veterans aged 65 or over is hospitalized for treatment of a non-service-connected disability. If this same ratio holds good in 1986, when the 65-plus veteran population will be six times as great, there will then be 186,633 veteran patients in this age group hospitalized for non-service-connected conditions.

## New Questions

This material gives added support to the medical profession's demand for reappraisal of the VA hospital program. Today, only 39 thousand of the VA's 110 thousand patients are being treated for service-connected conditions—but by 1971 the **total SC** load will drop to 30 thousand and by 1986 to 24 thousand. When it is further noted that the **total NSC** load (in VA and non-VA hospitals) will increase from 149 thousand in 1957 to 305 thousand in 1986, it is apparent that pressure for more VA NSC beds may well be only beginning.

Again, even today less than 8,000 of the VA's service-connected patients are tuberculosis or general medical, surgical, and neurological patients. The ratio of VA operating beds to service-connected patients is: psychiatric, 2:1; tuberculosis, 4:1; GM&S and neurological, 10:1. By 1986, however, 22 thousand of the service-connected patients will be in the psychiatric category — and all the others could fit comfortably in a 2,000-bed hospital.

How reasonable is it for the VA to maintain **half** its beds for GM&S patients?

## Ability to Pay?

The study also shows that, of 80,100 veterans hospitalized all over the nation for NSC general medical, surgical, and neurological disabilities, over 36,000 are in VA hospitals. The Bradley Commission reported that veterans are, generally, better off economically than the non-veteran population. Is it really true that nearly **half** (45.1%) of our veterans cannot afford general hospital care?

## Time to Review!

This study seems ample basis for President Eisenhower's statement, in the letter which forwarded this report to the House Committee on Veterans' Affairs, "It is, therefore, an opportune time for both the executive and legislative branches to review the situation and to determine the policies to control this program in future years."

(From the Federal Medical Services Newsletter.)



## **Chairman Mills sees Neither Tax Cut nor Wide-Open Spending**

Chairman Wilbur Mills (D., Ark.) of the key House Ways and Means Committee, outlining his expectations for this session, says he expects no tax cut, but at the same time he believes the overwhelmingly Democratic Congress will not be in a wide-open spending mood. All taxation proposals, including such social security measures as the Forand bill, are handled by this committee.

Mr. Mills' remarks were made to New York meetings of the Association of Mutual Savings Banks and the Tax Foundation, and released in Washington by the Ways and Means Committee. He said it was a "hard, cold fact" that Federal spending has been increasing in an "inexorable" way since the country was founded, from \$4 million for two years to an anticipated \$80 billion the current fiscal year. He did hold out some hope for revision of the progressive rates in the income tax brackets to encourage investment, and a broader tax base. He commented:

"... We are faced with the likelihood that people will continue demanding more and more services from the government. Therefore, as much as I would like to believe that this growth in our economy, and the resulting increase in our revenue level, will dissolve this fiscal shortage we face, I do not feel justified in relying on this alone. As a result, I have been forced to conclude that it is not enough to say that we can iron out the many problems in our tax structures as soon as tax reductions become possible, because, in all frankness, I am not at all certain when that day is coming."

## **Burney Suggests More Emphasis on Facilities, Personnel for Aged**

Health care of the aged was thoroughly aired during the course of Secretary Flemming's first conference with heads of medical and health organizations on "emerging health needs." PHS Surgeon General Burney said there were some problems in financing the care of the aged, but there may be need for more emphasis on facilities, personnel and administration. He cited the fact the government had

spent over \$1 billion on Hill-Burton facilities yet had spent but a little over \$1 million for research on facilities for various categories of patients.

## **Tax Deferment for Retirement Savings of Self-Employed**

Representative Eugene J. Keogh (D., N. Y.) will reintroduce legislation to allow professional and other self-employed persons a tax deduction on a limited amount of income contributed to voluntary retirement savings funds. Representative Thomas A. Jenkins (R., Ohio), cosponsor of the Jenkins-Keogh legislation in the 85th Congress, has retired and another ranking minority member of the Ways & Means Committee will introduce a companion bill.

The House passed an amended version of H. R. 10 on July 29, 1958, but the measure was not acted on by the Senate Finance Committee in the final days of the session. This legislation has the strong backing of numerous local, state and national associations representing professional and other self-employed persons. It has bi-partisan support in the House and Senate.

This legislation seeks to end the tax discrimination against the self-employed. Under present law, a company can deduct from taxes money put into a qualified employee pension plan and the employee is not taxed until he actually receives the retirement income, which normally would be when he is in a lower tax bracket. The self-employed person is now denied the opportunity to defer any taxes on income saved for retirement.

H. R. 10, as passed by the House, would permit self-employed individuals to take a current deduction for a limited amount of income (10% not to exceed \$2,500 per year) invested in certain types of retirement annuity or trust. The investments would be treated as ordinary income when actually received in later years.

If an individual is over 50 years of age on the effective date of the proposed act, the limitation on the annual deduction is increased by one-tenth for each year that his age exceeds 50. (For example, if he is age 60, the annual limit on his deduction would be 20 percent of income, but

not over \$5,000.) No deduction is allowed for any year beginning after the taxpayer attains age 70. The deductions could not exceed \$50,000 during the lifetime of the self-employed person.

The Treasury, though admitting the inequity, bases its opposition on the loss (or deferment) of revenue estimated to be \$360 million in the first full year of operation. Leading economists, however, feel that this estimate is fantastically high.

Proponents argue that the Treasury's estimate would pre-suppose that the self-employed would be able to save nearly \$2 billion — and all in a single year. They also point out that the money invested by the self-employed in retirement programs would create a fund of investment capital which will generate taxable profits in future years and thus in some measure offset the early loss.

The legislation would apply to persons who are subject to the tax on self-employed income (for social security purposes) except that certain categories such as doctors and ministers ordinarily exempt from the tax, would be eligible for the deduction under this bill.

(From Washington Letter of the American Bar Association.)

### Traffic Injury Study

Doctors from throughout Arkansas attended a "Symposium on Antibiotics and Treatment of Traffic Injuries" in the Hotel Marion, Little Rock, in November.

Principal speakers at a morning session, which was on antibiotics, were Mark H. Lepper, M. D., professor of preventive medicine in the University of Illinois College of Medicine; Alfred B. Longacre, M. D., assistant professor of clinical surgery, Louisiana State University School of Medicine, and Morton Hamburger, M. D., associate professor of medicine, University of Cincinnati School of Medicine.

Speakers in the afternoon session included Kenneth H. Abbott, M. D., clinical professor of neurosurgery, College of Medical Evangelists, Los Angeles; Edward J. Beattie Jr., M. D., professor of surgery, University of Illinois School of Medicine, and N. Frederick Hicken, M. D., associate

professor of clinical surgery, University of Utah.

Arkansans on the program were Dr. R. B. Robins, Camden; Dr. Randolph Ellis, Malvern; Dr. Fount Richardson, Fayetteville; Dr. H. W. Thomas, Dermott, and Dr. C. O. Long, Ozark. All are members of the Arkansas Academy of General Practitioners.

Dr. Louis K. Hundley, Little Rock, president of the Arkansas Medical Society, was moderator at the morning session. Dr. Douglas Lawrason, provost of the University of Arkansas School of Medicine, moderated the afternoon meeting.

The meeting was sponsored by the Arkansas Academy of General Practice, the Arkansas Medical Society and the University of Arkansas School of Medicine in co-operation with Lederle Laboratories.

### Hospital Expansion

St. Bernard's Hospital, Jonesboro, has announced plans for a \$400,000 expansion, provided necessary funds can be raised.

Sister M. Mildred, OSB, hospital superintendent, said the annex would be used to house the X-ray department, children's department and provide extra patient rooms.

Although the hospital has saved the second part of its Ford Foundation grant — a total of \$34,400, the bulk of the construction funds must come from public donations.

St. Bernard's Hospital has grown into the largest and best equipped in Northeast Arkansas, and it draws patients from over North and Eastern Arkansas and Southeast Missouri.

Construction on the new annex will begin as soon as enough money to finance the project is assured.

### Pediatrics' Meet

Two of the nation's better-known pediatricians were guest lecturers at a two-day pediatrics conference for general practitioners at the Medical Center recently.

The speakers were Dr. Arild E. Hansen, professor and chairman of the Department of Pediatrics, University of



Texas, Medical Branch, Galveston, and Dr. Alexis Hartmann, professor and chairman of the Department of Pediatrics, Washington University School of Medicine, St. Louis.

Dr. Hansen discussed "Emergencies of the Newborn" at the morning session while Dr. Hartmann spoke on "Acidosis and Alkalosis."

Members of the Pediatric Department faculty at the Medical Center also participated.

## Dr. Austin Smith Resigns as Editor of J.A.M.A.

**Chicago** — Dr. Austin Smith announced his resignation as editor of The Journal of the American Medical Association.

Dr. F. J. L. Blasingame, executive vice president of the American Medical Association, said that Dr. J. F. Hammond, associate editor of the Journal, will take over Dr. Smith's duties.

In a brief memorandum to the AMA Board of Trustees, Dr. Smith asked that he be relieved of his editorial responsibilities Dec. 15th.

Dr. Smith said that it is his conviction that after 18 years with the Association there is need for "new blood" in key administrative positions and although he has no immediate plans he hopes to take a much needed vacation.

## Medical Educators of World To Hold Conference

Medical educators from more than 62 countries will meet at the Palmer House, Chicago, Illinois, August 30 to September 4, 1959 to exchange information and consider the problems of graduate, postgraduate and continuing education for the doctors of the world.

"Medicine—A Lifelong Study" will be the theme of the Second World Conference on Medical Education organized and sponsored by The World Medical Association in collaboration with the World Health Organization, the International Association of Universities and the Council for International Organizations of Medical Sciences.

The Program Committee has invited approximately 125 speakers from more than 55 countries to present papers and has planned the program with a view toward devoting adequate time for discussion on each topic. Simultaneous translation in English, French and Spanish will facilitate the exchange of ideas among the world's leading medical educators, investigators and practitioners as they seek efficient application of medical methods for assisting every doctor to increase his knowledge of medicine concomitantly with the rapid advances in medical science.

## Brookhaven Medical Research Center Dedicated December 16

The nation's newest atomic medical research center, including the world's first nuclear reactor designed specifically for medical use, was dedicated Dec. 16, 1958, at Brookhaven National Laboratory, Upton, L. I., New York. Brookhaven is operated by Associated Universities, Inc., for the U. S. Atomic Energy Commission. Commissioners Willard F. Libby and John F. Floberg represented the Atomic Energy Commission at the dedicatory ceremonies.

In addition to the reactor, the new Brookhaven Medical Research Center includes a 48-bed hospital for research patients and laboratories for studies on medical applications of atomic energy.

## Four Day Meeting for Surgeons And Nurses, St. Louis, Missouri, March 9-12, 1959

More than 3,500 surgeons, nurses, and related medical personnel from throughout the country are expected to attend a comprehensive, four-day Sectional Meeting of the American College of Surgeons in St. Louis, March 9 through 12, 1959. Headquarters will be the Kiel Auditorium, with many sessions scheduled also in leading St. Louis hospitals.

This four-day meeting, like the annual Clinical Congress, is designed to inform the medical profession at large about developments in surgery, and to focus attention on newer ways of handling problems encountered in daily practice. The program will include hospital clinics, pan-

el discussions, symposia, scientific papers, technical exhibits, medical motion pictures and cine clinics in general surgery and in the specialties of thoracic surgery, urology, gynecology and obstetrics, ophthalmic surgery and orthopedic surgery.

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## ANNOUNCEMENTS

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### **International Congress of Gastroenterology**

Leiden (The Netherlands), April 20 to 24, 1960.

The 6th Meeting of the Association of the National European and Mediterranean Societies of Gastroenterology, organized by the Association of Dutch Gastroenterologists, will be held in Leiden, the Netherlands, from April 20 to 24, 1960.

The **main themes** of the conference will be:

1. Pathology of the small intestine;
2. Hepatitis, Cirrhosis hepatis and their possible connection.

### **American College of Surgeons**

Sectional Meeting, Hotel Vancouver, Vancouver, B. C., February 26-28. Dr. T. R. Sargeant, Local Chairman, Dr. Michael L. Mason, Secretary, 40 East Erie Street, Chicago 11, Illinois.

### **American Psychiatric Association**

There will be an A.P.A. Regional Research Conference on February 28 and March 1, 1959 immediately following the Eleventh Annual Institute of Psychiatry and Neurology, VA Hospital, North Little Rock. The meeting will be at the University of Arkansas Medical Center and will feature the research of psychia-

tric residents and medical students. (The transportation of the junior participants will be paid from a grant for this purpose from the Smith, Kline and French Fellowship Foundation). Dr. Harold E. Himwich will participate as the A.P.A. representative.

Approximately 30 papers will be presented by the junior participants, most of whom are in the southern region extending from Texas to North Carolina. The papers will be discussed by panels of southern chairmen of psychiatry and other outstanding psychiatrists.

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### **Southwestern Society of Nuclear Medicine**

The Southwestern Society of Nuclear Medicine will hold its fourth annual meeting at the Roosevelt Hotel in New Orleans, Louisiana, March 14-15, 1959.



# Obituary

Dr. Lucien Herbert Lanier, 78, retired Texarkana physician died November 21, 1958, en route to a hospital after a long illness had become critical. He had lived in Texarkana 47 years and was widely known as an eye, ear, nose and throat specialist. He retired in 1954 and became ill about two years ago. Dr. Lanier was born August 23, 1880, near Jackson, Tenn. He was educated by private instructors and in the grade schools of Madison County, Tenn., and then entered Union University at Jackson in 1897 for preparation to enter medical school. In 1900 he matriculated in Barnes Hospital at St. Louis and obtained his medical degree in 1904. Dr. Lanier studied in New York and Europe before moving to Texarkana in 1911. Early in his career, Dr. Lanier affiliated with his county, district, state and national medical societies and had been a loyal and consistent supporter of organized medicine. He was a member of the staff of the Michael Meagher Memorial Hospital, having served two terms each as its secretary and chief of staff. His affiliations included membership in the Beech Street Baptist Church, the Masonic Lodge, Sons of the American Revolution and the American Legion. Surviving are his wife, Mrs. Mary Lanier; one daughter, Mrs. Estelle O'Rear, of Kansas City, Mo., a sister, Mrs. Kate Exum, and a number of nieces and nephews.

Dr. Walter E. Acree, 82, of Huntsville, who had practiced in his county for more than 50 years, died Wednesday, November 5, 1958, in a Fayetteville hospital. He was born September 2, 1876, at Macon, Ga. Dr. Acree started his practice in St. Paul in 1907. He moved from there to Marble and later to Huntsville where he had practiced since 1918. He was a member of the American Medical Association, the Arkansas Medical Society and was a past president of the Madison County Medical Society. He was a member of the I.O.O.F. and Masonic Lodges, and the Order of Eastern Star.

Dr. Acree is survived by his wife, the former Zora Lucinda Brown, whom he married in Searcy County, Ark. The couple celebrated their 50th wedding anniversary a few years ago. Other survivors are three daughters, Mrs. Ola Simpson of Los Angeles, Calif., Mrs. Charles Finklea of Muskogee, Okla., and Mrs. Murphy Mears of Washington, D. C.; a brother and two sisters.

Dr. Holman Bennett Thompson, aged 72, oldest practicing physician at Fort Smith, died November 24, 1958, after a long illness. Dr. Thompson was a native of Paris and a graduate of Paris High School. He graduated from the University of Arkansas Medical School and had done post graduate work at Tulane University. Dr. Thompson was a member of the Sebastian County Medical Society, and the Arkansas Medical Society. He also was a member of the First Methodist Church, the Belle Point Masonic Lodge, Amrita Grotto, Knights Templar and was a Shriner. Survivors include his wife, Mrs. Elizabeth Verfurth Thompson; his stepmother, Mrs. Lydia Thompson of Paris; seven brothers and two sisters.

## PERSONALS AND NEWS ITEMS

**Dr. Ben Saltzman** of Mountain Home was recently elected to the five-man Board of Directors of the National Flying Physicians Association.

The new chief of staff of Davis Hospital, Pine Bluff, is **Dr. E. Frank Reed**. He succeeds **Dr. Walter J. Wilkins, Jr.**

A Malvern physician, **Dr. Ramond E. Peebles**, has given up his practice to accept a Fellowship for specialization in anesthesia. Dr. Peebles entered New Orleans Charity Hospital in January, 1959. He will also serve on the staffs of both Tulane and Louisiana State University. Succeeding Dr. Peebles in his practice is **Dr. John D. Wise**, who has been practicing medicine in Booneville.

**Dr. James M. Kolb** of Clarksville was in Minneapolis, Minn., recently as a delegate from the Arkansas Medical Society to the American Medical Assn. He was appointed to a five member committee of the house of delegates of the American Medical Assn. to make a special study of "Medical Practices and Hospital Staffs."

In January **Dr. Thomas G. Johnston** and **Dr. Alan G. Cazort** of the Cazort-Johnston Allergy Clinic moved their office in Little Rock to 4001 West Capitol Avenue.

Contributors to the American Medical Education Foundation from the State of Arkansas during November 1958:

Dr. E. M. Gray,	\$50.00
Mountain Home, Arkansas	

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### Answer—What Is Your Diagnosis?

#### ANATOMY AND DIAGNOSIS LEFT LUNG-SQUAMOUS CELL CARCINOMA

Age, 60; race, W; sex, M.

**CLINICAL DATA:** C.C.: Weakness and cough. Two years progressive weight loss. Cough became productive of whitish sputum without blood. Bronchoscopy revealed "papillary tumor" left main stem bronchus. BP 125/75, P-84, R 20, T 99.2. Chronically ill. Pea sized cervical and supraclavicular nodes. Liver was enlarged. Auscultation of the chest revealed dullness in the left upper lobe but no rales.

**SURGERY:** Thoracotomy was performed on 2/3/58, the 5th rib being resected. Patient was obviously inoperable because the hilum was completely involved.

**PATHOLOGY:** Biopsy specimens revealed necrotic tissue and atypical cells suggestive of squamous cell carcinoma.

**X-RAY FEATURES:** 1/29/58 Chest: Fairly conclusive evidence of bronchogenic carcinoma involving the left upper lobe bronchus with an atelectasis of the left upper lobe.

\*University of Arkansas Medical Center Department of Radiology.

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## Proceedings of Societies

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At the special meeting of the House of Delegates November 23, 1958, **Dr. K. E. Beaton** of Wynne was elected vice-councilor from the third district to serve the unexpired term of **Dr. Ray B. Millwee**. **Dr. Beaton's** term will expire April 1959.

The Ouachita County Medical Society met in regular monthly dinner session Thursday night, December 4, 1958 at the Hotel Camden. **Dr. Harold B. Hawley** of Little Rock discussed the venereal disease problem in Arkansas. The regular meeting night of the Society was changed from the first Thursday of each month to the first Tuesday night. New officers for 1959 were elected as follows: President, **Dr. James W. Hawley**, Camden; Vice-President, **Dr. J. B. Jameson, Jr.**, Camden; Secretary, **Dr. R. B. Robins**, Camden; Delegate, **Dr. James W. Hawley**, Camden; Alternate, **Dr. Bruce Ellis**, Stephens.

**Dr. Paul Ledbetter** of Jonesboro was elected president of the Craighead-Poinsett Medical Society at the December meeting. Other officers elected include **Dr. C. Z. Swingle** of Marked Tree, vice president; and **Dr. J. H. McCurry** of Cash, re-elected secretary. Attorney General **Bruce Bennett** was principal speaker at the meeting. He spoke on "Creeping Socialism and Medicine."

The Randolph County Medical Society met in conjunction with the officials of the Randolph County Hospital for their December meeting. **Dr. Robert Abernathy**, University of Arkansas Medical Center, was in charge of the training section on the problem of staphylococcus infection.

**Dr. Joseph Norton** has been elected president of the Pulaski County Medical Society. Other officers named at the meeting in December include **Dr. Guy Farris**, vice president; **Dr. Drew Agar**, recording secretary; **Dr. William Steele**, recording treasurer-elect; and **Gaston G. Fulmer**, re-elected to his 12th consecutive term as executive secretary.



## Hospital-Insurance-Physician Committee Meeting

The Arkansas HIP Committee met in Little Rock November 9, 1958 to discuss claims against an insurance company of alleged misleading advertising, alleged agent misrepresentation of statements on an application blank, and alleged irregular practices of an agent in filling out application blanks.

An exhaustive discussion was carried on concerning the adoption of a uniform claim blank for all hospital claims, accident and health, individual and group accident and disability insurance claims. Since the Committee was unable to reach a universal agreement in the selection of a uniform blank, the choosing of the blank was left to the discretion of Insurance Commissioner Harvey Combs.

## BOOK REVIEWS

**A MANUAL OF PHARMACOLOGY.** Torald Sollman, M.D. W. B. Saunders Co., Philadelphia, London. Eighth Edition. Pp. 1535. May 31, 1957. \$20.00.

This eighth edition of Dr. Sollman's Manual of Pharmacology continues the high standard of the previous editions. As a textbook of pharmacology, the reviewer is impressed with its complete coverage; however from a philosophic point of view, one might argue whether or not pharmacology is best taught by learning a compendium of facts about different chemical substances rather than teaching pharmacology in terms of the effect of drugs on patients. This is not to be construed as a criticism of the text as such, but it is a query as to which type of teaching is the most effective: learning a compendium of drugs or teaching in terms of the effect of medicines on various states of altered physiology. This text has a very up-to-date section on hormones. The author has very wisely included brand names throughout the text; the multiplicity of trade names for a single drug is confusing to the practicing physician not alone the student. In general, the reviewer is impressed with the excellence of this text particularly with regard to its complete coverage of the field of pharmacology.—AK

**METHODOLOGY OF THE STUDY OF AGEING.** CIBA Foundation. Editors G. E. W. Wolstenholme and Cecilia M. O'Connor. Little, Brown & Co. Boston. 1957. \$6.50.

This is an extremely interesting book published by the CIBA Foundation. Its greatest attraction

\*Marketed by the Carroll Dunham Smith Pharmacal Company, New Brunswick, N. J.

## TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

### Tuberculosis, a Disease Of Old Age

by Robert G. Bloch, M.D., American Medical  
Association Archives of Internal Medicine,  
June, 1958.

*The highest mortality from tuberculosis has now shifted to the older age groups. This has created new problems in therapy and control which may be complicated by social and economic conditions. Tuberculosis hospitals are needed to care for aged persons.*

Since the beginning of this century and especially since the most recent advances in the battle against tuberculosis through effective chemotherapy, the age distribution of the disease has changed radically wherever a concerted attack on tuberculosis has been possible. The first great change was accomplished through effective sanitation of the milk supply, which resulted in control of bovine tuberculous infection in the United States; the secondary manifestations of bovine infections, particularly tuberculous osteomyelitis, have since become comparatively rare.

### FAMILIAL EXPOSURE TO TB IMPORTANT

This achievement in combination with the enlightened concept that the exposure to the human bacillus in home life is the main source of clinical pulmonary tuberculosis resulted in a decline of the mortality among children to very low values even before the era of chemotherapy. During the past decade it has almost reached the zero point.

The steady decline of the mortality curve for the total population during the past 50 years shows some of the factors which are at work in the tuberculosis problem. In the United States the picture is greatly

will be to the research team and to the internist. A particularly interesting chapter is on twin data on the genetics of ageing. This book makes no attempt to be a comprehensive study of ageing but is merely a review of methodology of the study of ageing. It is recommended to those interested in gerontology.—AK

influenced by the prevalence of the exudative and progressive forms of pulmonary tuberculosis among the nonwhite and immigrant elements of the population, chiefly the Negroes, the Puerto Ricans, and the refugees from war-tortured countries, and to some extent also by the American Indian. Undoubtedly, the published statistics convey an overoptimistic impression if it is interpreted in terms of "cured" or "healed" tuberculosis. We know that the lower mortality is not the mere result of the decrease in the number of new active cases. Therefore, it must be assumed that, especially during the past 10 years of chemotherapy the swiftness of the decline of the mortality is due to the increasing chronicity of the disease, which has shifted its weight into an older age group of the population. This change has become one of the most burning problems in tuberculosis care.

#### *DEATH RATES SHOW SWIFT TO OLDER AGES*

Tuberculosis used to be the greatest killer of mankind during the prime of life but today the peak of the mortality during the second and third decades of life has flattened to comparatively insignificant values. The second peak, during the seventh decade of life, now has emerged as the highest elevation.

Recently published reports of the World Health Organization show that the shift of the highest mortality to the senile age is universal; they also indicate the persistence of a high mortality among children in some countries.

In the past, the cirrhotic, the fibroid, and the fibrocaseous forms of pulmonary tuberculosis have been a rather uniform finding in elderly patients. Most always they had been tuberculous for many years, although the old disease was frequently associated with new bronchogenic exacerbations. In recent years, it has been a surprising and somewhat puzzling experience to find many fresh exudative involvements in patients where the absence of tuberculosis had been established when they were already in the old age group. The likeliest explanation is that in previous generations, when roentgenologic examination was less commonly applied,

the disease was not looked for in older persons.

Nowadays we find in the tuberculosis wards many patients who were hospitalized for some nontuberculous disease associated with tuberculosis. The true situation now is that the old tuberculous patient dies with rather than of tuberculosis. Often he has been sent to the tuberculosis wards for isolation rather than because of the symptoms of tuberculosis and the need for its treatment.

#### *NEED FOR ISOLATION*

The question of the infectiousness of tuberculosis in some ways has become more complicated through modern chemotherapy rather than simplified. The patients belonging to the group with sputum abundantly positive on direct microscopic examination and culture cannot be permitted to return home to live with children and young adults even under the most favorable living conditions. Those in the group in which the production of bacilli is diminished to occasional and scant positive results on culture are considered by many authors as practically non-infectious. However, the continuous contact in intimate home life has long proved itself as the essential cause of clinical tuberculosis. Therefore, extreme caution is indicated lest we send home not only parents to infect their children, but also grandparents to infect their grandchildren. This thought should apply even to the group of patients with negative sputum findings of seeming reliability. The fact that resected lesions from such patients yielded tubercle bacilli on either microscopic or cultural examination, or both, in well over one-third of all cases, offers much food for thought and caution.

The social, economic, and emotional problems of old age tuberculosis even overshadow the medical difficulties. The senile patient is lonely and wretched; often he has neither family nor friends; if he is widowed, his children, themselves beset by poverty, may not be able and at times are not willing to add to their burden by ministering to him. The old patient is frightened and helpless, and his reliance on social and welfare agencies is complete.





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\*A Symposium on the Pharmacologic Effects of Dartal on the Liver, Chicago, Searle Research Laboratories, Feb. 7, 1958.

*HOME CARE NOT  
COMPLETE ANSWER*

Since chemotherapy has come to the fore, the idea of home care for the tuberculous has received widespread attention. Unquestionably the period of hospitalization can now be shortened, but home therapy without an initial stay in a hospital or sanatorium cannot be recommended. It is bound to fail in many aspects of diagnosis and therapy and deprives the patient of the indispensable education in the meaning and in the demands of his disease in the specifically created atmosphere of the tuberculosis hospital. When the time for discharge and home care approaches, a thorough investigation should be made of the home situation. Supervised rest and

quiet, cleanliness, and comfort are still the mainstay in the treatment of tuberculosis. As yet, nobody has offered proof that the old methods can be replaced simply by the free provision of antibiotics by the community, even assuming that the drugs are taken as they were prescribed.

The closing of tuberculosis hospitals and sanatoria in reliance on modern chemotherapy is premature. They should serve as the desperately needed homes for homeless aged tuberculous patients, where they can enjoy a secure, dignified, and happy existence. Institutional care for tuberculosis will develop more and more to a crying need as the disease increasingly becomes a geriatric problem.





# The JOURNAL

## OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

MARCH, 1959

Number 10

## Injuries to the Spine and Spinal Cord\*

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"It is well known to every surgeon of experience that no injury of the head is too trifling to be despised. This observation, made of old by Hippocrates, may be applied with equal, if not with greater, justice to injuries of the spine." Thus John Eric Ericksen in 1866 introduced his famous six lectures on "Concussion of the Spine."<sup>1</sup> At that time railway accidents were most certainly the common counterpart of the present day automobile accidents. Ericksen keenly discerned that under these circumstances, many types of injuries to the spine and spinal cord took place, all of which were then called "Railway spine." He foresaw, however, that they might also be caused by "any of the more ordinary accidents of civil life," and that each case needed careful study from its clinical, physiological, and pathological, as well as its medico-legal aspects. How true this need is today with the increasing complexity of our industrialized and motorized world which is responsible for the marked rise in the number of injuries to the spine, spinal cord and its investments and emergent nerve roots.

A review of the important aspects of spinal anatomy in relation to injury, and of the various types and sites of predilection of spinal injury, followed by a few notes on their management is indicated. Particular emphasis will be placed upon the more serious injuries of the cervical spine and spinal cord.

### INCIDENCE OF SPINAL INJURIES

It is difficult to obtain any valid data as to the frequency of injuries to any one part of the body. Such statistics are usually found in special studies of relatively small groups of cases and these reports show a wide variation in the relative frequency of injuries of the spine and spinal cord, as well as of other body parts.

The New York State Motor Vehicle Accident report for 1957 discloses a total of 9,312 fractures of which skull fractures accounted for 643 or 7%, and fractures of the spine accounted for 177 or 1.9% of the total number.

The Cornell Automotive Crash Injury Research Project, in a study of 3,450 injured occupants of 2,000 cars involved in accidents, noted a frequency of injuries of the neck and cervical spine of 3.6%. These cases are further broken down into minor injuries, 44%; non-dangerous injuries, 17.6%; dangerous injuries, 5.6% and fatal injuries, 13.4%. In this same study head injuries proved fatal only 5%. In Powers'<sup>2</sup> report of auto accidents in rural areas (New York State), the head and neck were injured with twice the frequency of any other part of the body, 37.1% in 2,891 known injuries in 712 patients injured.

In 1957, disabling injuries sustained while at work in the entire nation totaled 1,950,000. Of these, about 14,200 were fatal and 80,000 resulted in some permanent impairment.<sup>3</sup> If we can assume from other statistics that some 10-12% of each of these groups received spine injuries, then these statistics assume considerable importance to us as physicians.

\*Read before the Arkansas Academy of General Practice, Arkansas Medical Society and the University of Arkansas School of Medicine, November 9, 1958, Little Rock, Arkansas.

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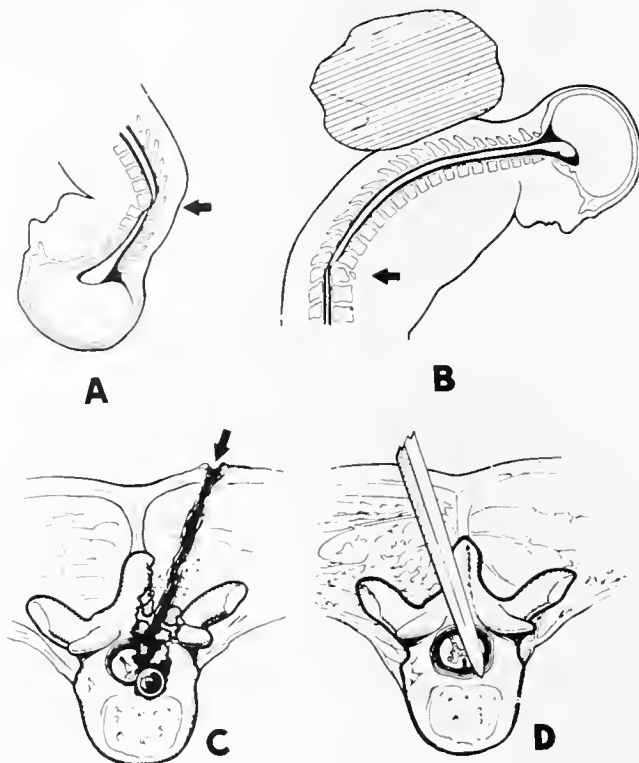


Fig. 1 A-D

Mechanism of injury to the spinal cord. (A) Dislocation of cervical spine due to hyperflexion of head; (B) fracture-dislocation of lower thoracic spine due to crushing weight on shoulder; (C) gunshot wound; (D) stab wound.



F

Fig. 1

E. Falls on head or buttocks causing cervical spine and spinal cord, or lumbar spine and nerve root injuries. F. Hypertension — recoil (whiplash) neck injuries.

#### PATHOGENESIS AND PATHOLOGY<sup>1</sup>

The vertebral column may be injured by several ways which involve several variant mechanical principles such as (1) violent flexion or extension of the spine, (2) direct blows (falls across a beam, blunt objects striking back, etc.), (3) indirect blows (falls on feet, buttocks or head) and (4) penetrating wounds, gun shot wounds, sharp objects, etc.

The bony deformities of the spine occurring consequent to the mechanism of trauma mentioned above, are determined by variations in structure of the vertebral column and by the qualities of the forces applied (such as direction, intensity and point of impact). For instance, mobility in all directions is the particular function in the cervical level. Stability is of prime importance in the thoracic region, while stability with slight motion is paramount in the lumbar area. The details of response to trauma remain surprisingly constant in these levels.

The types of traumatic lesions include (1) pure fractures Fig. 2, (2) pure dislocations Fig. 3 and (3) fracture-dislocations Figs. 4, 5 A & B (4). Pure fractures occur more commonly in the cervical and thoracic levels and are usually the result of application of force directly to the spine, such as falls across blunt objects (a beam). In such instances fractures of spinous processes,



Fig. 2

Fractured lamina and spinous process C1 incurred when head struck ceiling of car.



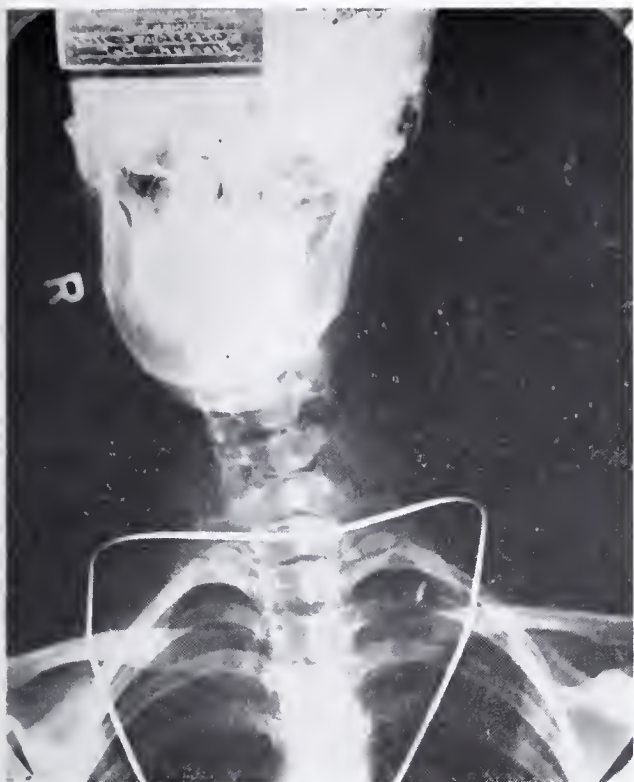


Fig. 3  
Position of head in rotational subluxation  
(dislocation) of C1 on C2



Fig. 4  
Fracture-dislocation C6-7, fortunately accompanied  
by only minimal spinal cord injury.

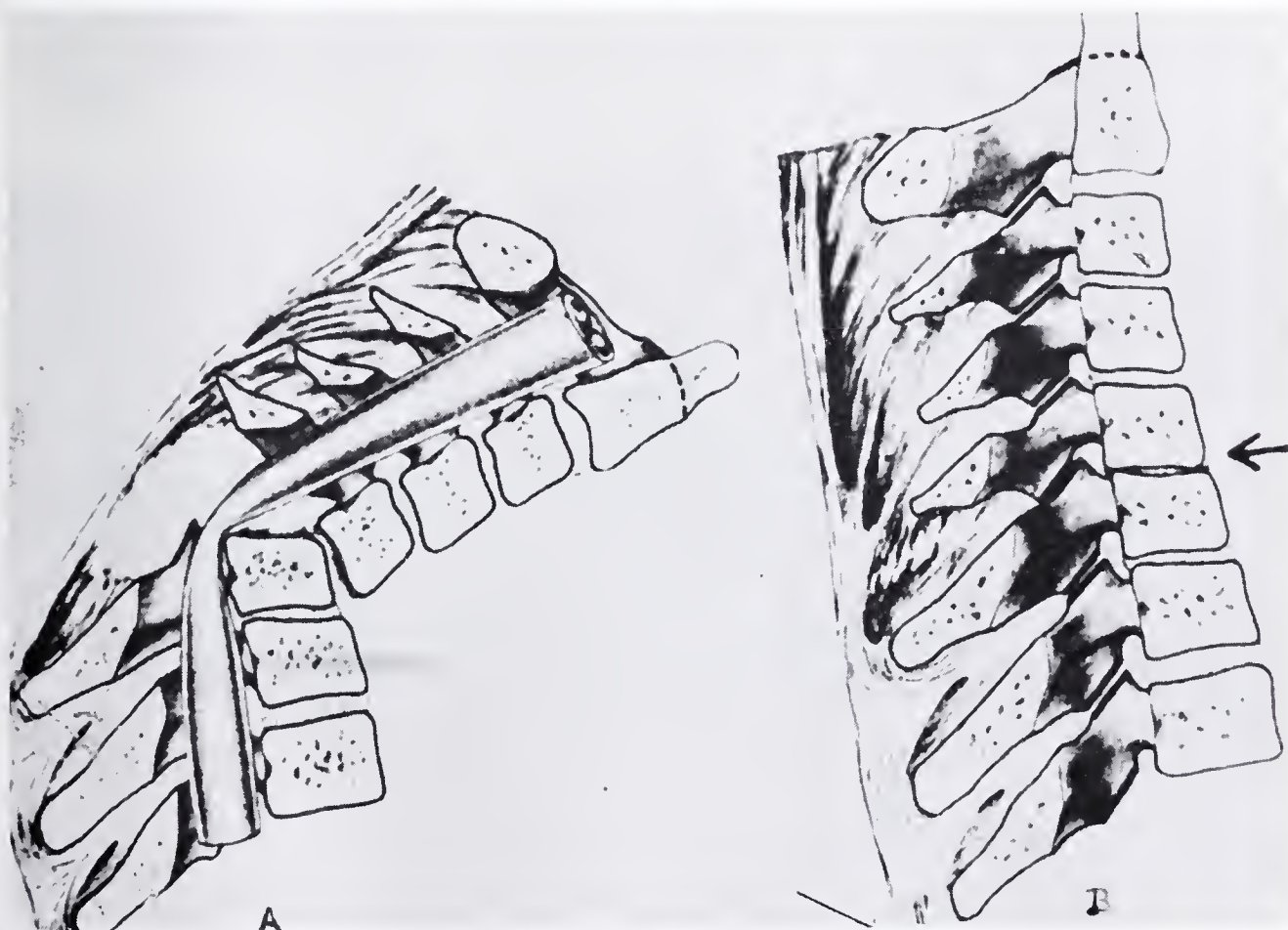


Fig. 5  
Diagrams (cervical spine) of (A) fracture-dislocation with tearing of ligaments, etc.,  
and compression of spinal cord; (B) of cervical spine after reduction with loss of inter-  
vertebral disc space C5-6, and associated straightening of cervical spine.

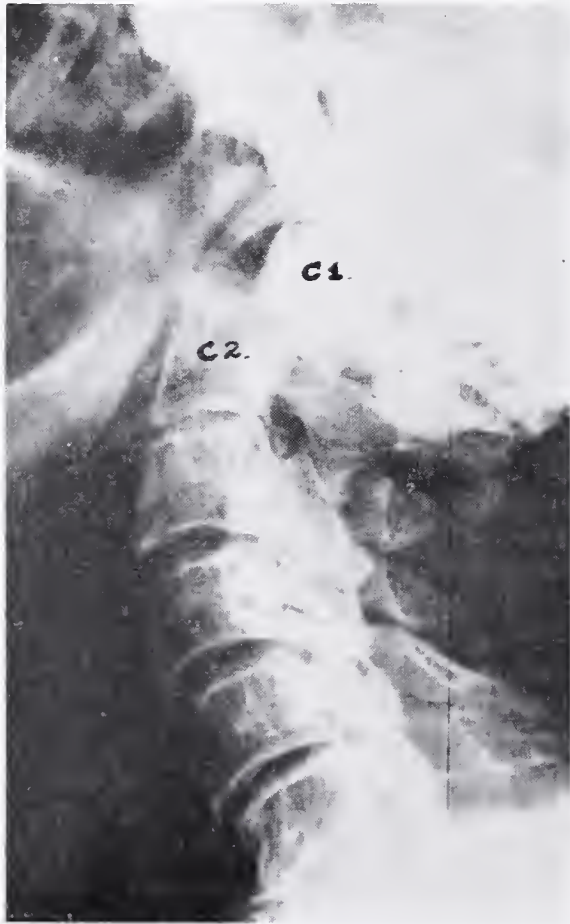


Fig. 6

Fracture C2 with posterior dislocation of C1 on C2 in an elderly male with pain in back of neck and head. No spinal cord involvement.

articular processes, lamina or pedicles are common. Isolated fractures of the neural arch most commonly involve the atlas and the axis. If the blow is more severe (falls from relatively great heights), the fractures may be complicated by serious dislocations.

Pure dislocations are more apt to result from indirect injury, in which the force applied to the spine is from above or below with associated hyperflexion (or rarely hyperextension) of the spine.

Fracture dislocations account for some 60% of the spinal injuries, whereas pure fractures and pure dislocations are about evenly divided.<sup>5</sup> Actual fracture occurs in about one-fourth of the cases in the cervical level. In one-half the cases in the thoracolumbar region, the dislocation is accompanied by fracture.

Cervical level dislocations occur more frequently than elsewhere. Such dislocations are prone to occur between the 1st and 2nd, 5th and 6th, or 6th and 7th cervical vertebrae, the lower sites being more common because of marked mobility of the neck and the presence of certain mechanical factors at this site. The next large group of dislocations occur in the lower thoracic spine usually between

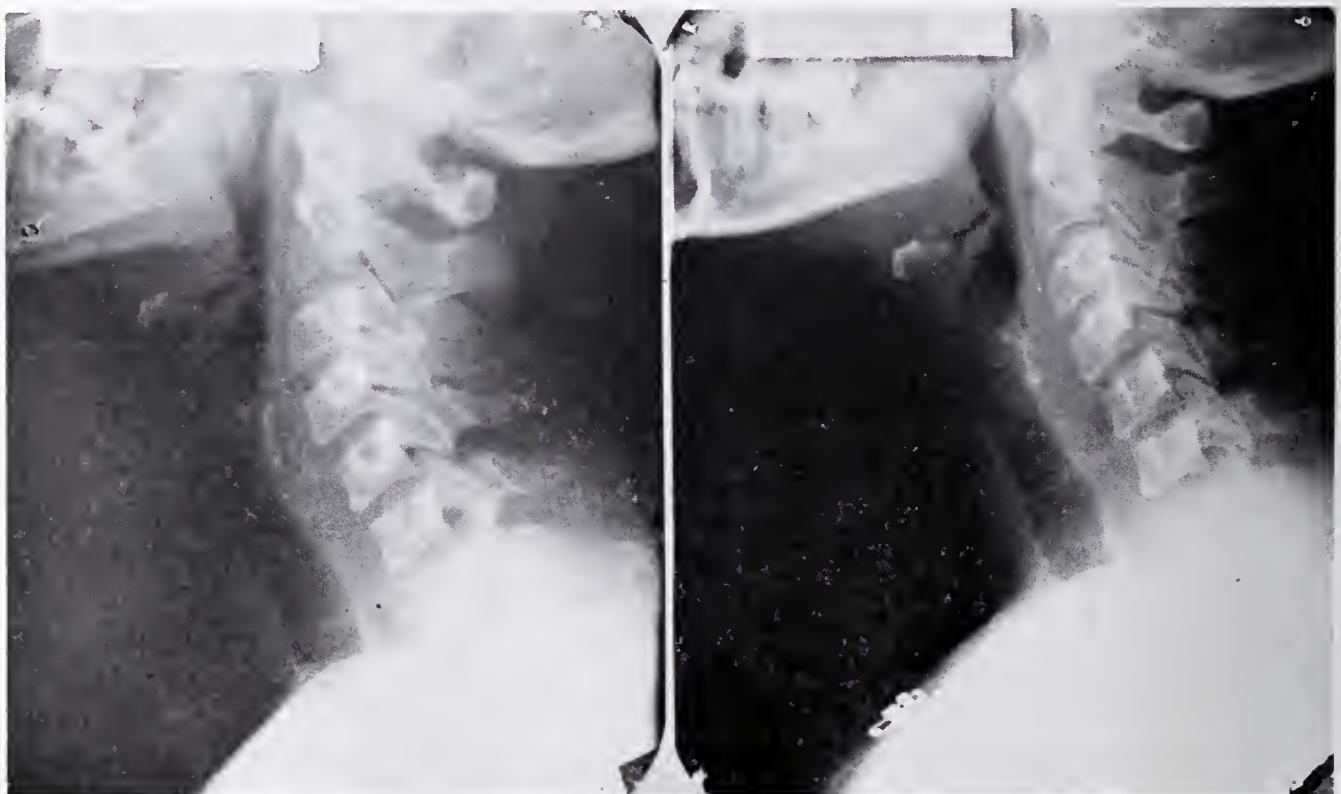


Fig. 7

Slight subluxation C3 on C4 (a) See with head in extension, but not evident in (b) neutral position



T11-12. Dislocations are uncommon in the lumbar region.

Fractures of the vertebral bodies Figs. 8, 9, 10 are most certainly the combined effect of direct violence to the vertebral axis with associated violent hyperflexion. Such

injuries are incurred by falls on the head, feet, buttocks, or a result of a heavy object falling on the spine. In recent years, compression fractures of one of the lower thoracic or lumbar vertebrae have resulted from the victim's head striking the top

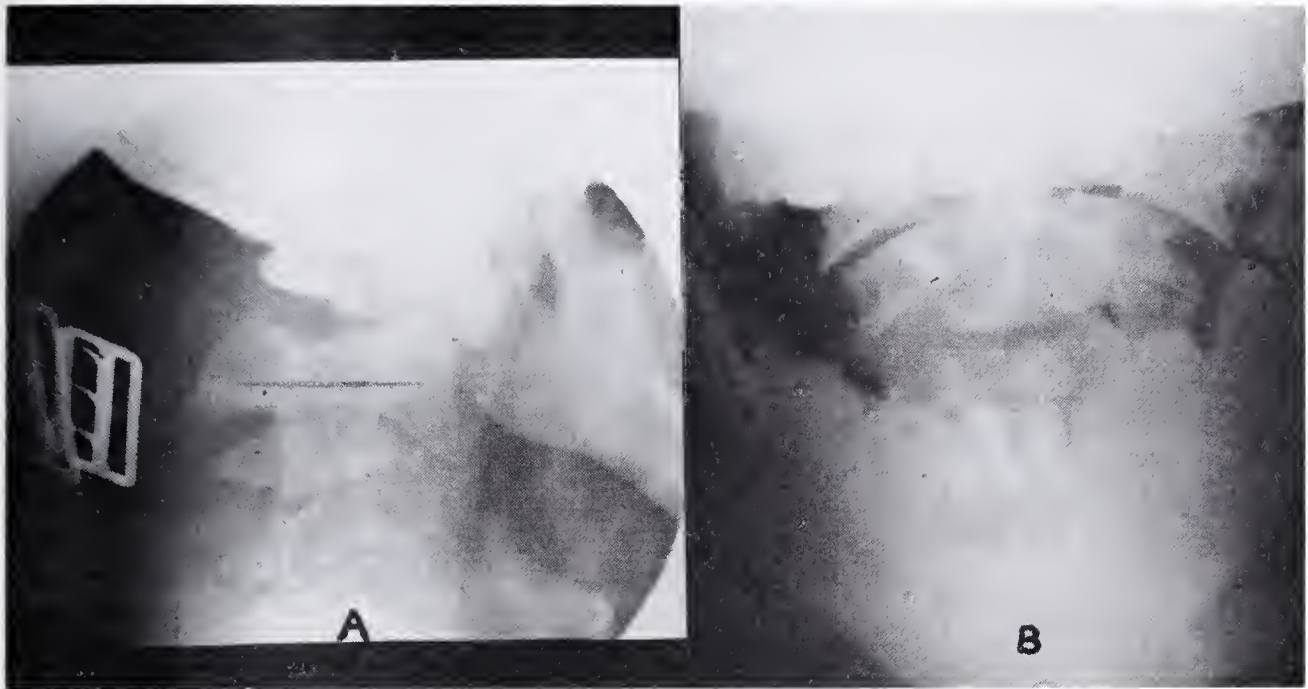


Fig. 8

Compression fracture of atlas with anterior displacement of C1 vertebral body (A) and lateral displacement of facets (B).

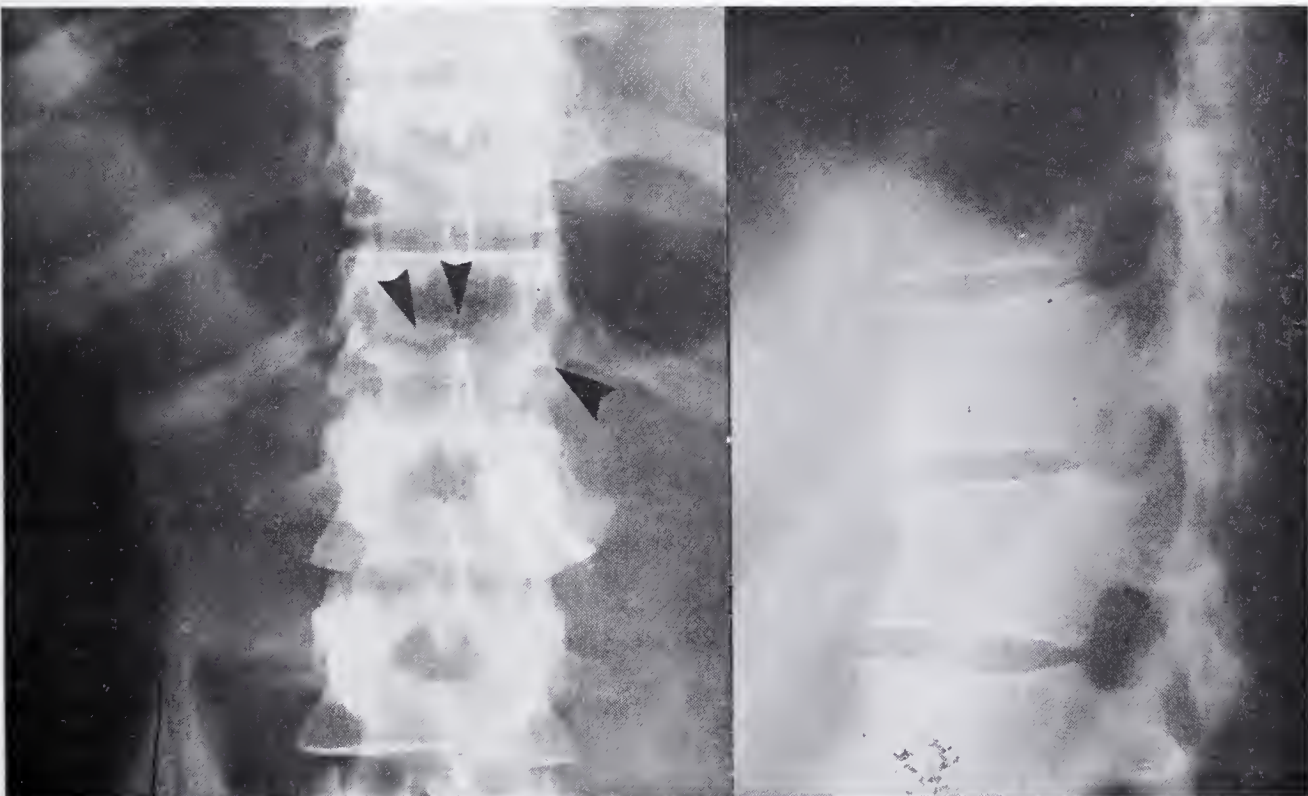


Fig. 9

Multiple fractures in body of T12 as seen in AP x-ray view but not visualized in lateral view — from fall on buttocks and hyperflexion mechanisms.

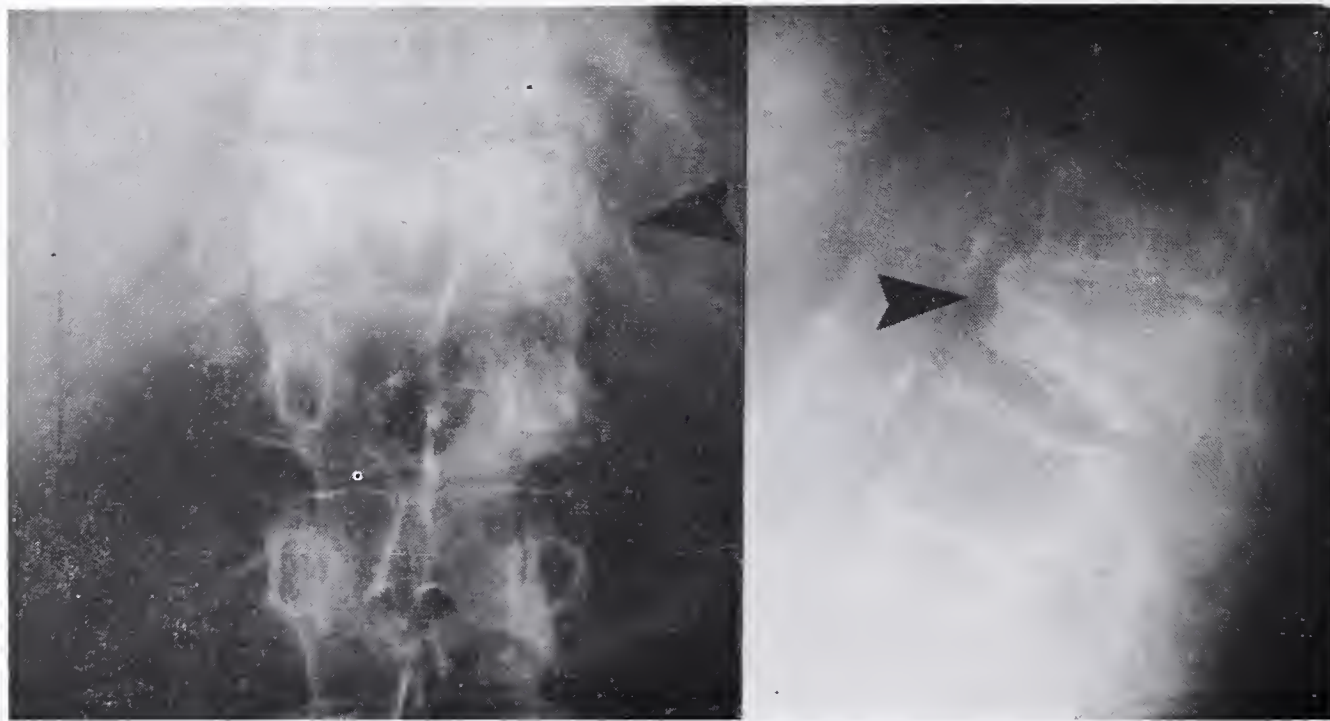


Fig. 10  
Compression fracture D12 with only D12 root pain.

of an auto. This causes sudden hyperflexion of the spine with the consequent compression of the thoracic or lumbar vertebrae.

#### MECHANISM OF SPINAL CORD INJURIES

Just as the vertebrae may be injured in various ways, so may the spinal cord. These mechanisms include (1) indirect violence without evident bone involvement, (2) penetrating wounds, and (3) dislocations or fracture-dislocations. In cases of indirect violence to the spine without dislocation, fracture or discal herniation, the cord may be damaged either by the shock wave transmitted through the cerebrospinal fluid, distortion of the cord with relative points of fixation at the dentate ligament, or by its slapping against the wall of the spinal canal. This mechanism may injure the cord diffusely or locally.

Another mechanism of importance occurs with hyperextension of the neck, at which moment the ligamentum flavum infolds and compresses the spinal cord against osteoarthritic ridges in the mid and lower cervical levels. The injury to the cord has been described as "acute central cervical spinal cord injury." Many times the symptoms are reversible.

Pathologic changes occurring in the spinal cord consequent to trauma may be classified as concussion, hemorrhage, contusion or compression, laceration and transection.

*Concussion of the Spinal Cord.* Injuries which result in a temporary loss of function in the spinal cord with recovery taking place in a few hours is considered to be a result of concussion. Such an injury may occur in a variety of ways, the most common being a result of indirect violence. By usage, unfortunately, the term "concussion" has come to be applied to any damage to the cord incurred consequent to indirect violence. Such a broad interpretation frequently encompasses far more serious injuries than is ordinarily meant by the term.<sup>6</sup>

Concussion has been attributed to several mechanisms, the primary force being that of the indirect violence causing oscillations of the spinal cord or of the cerebrospinal fluid, or by displacement of the cord against the walls of the canal. In mild concussion, probably colloidal changes take place in the nerve cells and/or neurons, together with vasomotor changes. In more serious degrees of concussion of the cord, minute (focal or diffuse) hemorrhages, and areas of edema



are known to develop, all of which are presumably reversible in character. More severe hemorrhages, contusions and lacerations may occur consequent to the same mechanism, but these should be considered to be true organic lesions rather than concussion. In concussion, normal function is re-established in short periods up to hours, and at most the symptoms do not last over a day or two. If they fail to clear up within this period a structural lesion including hemorrhage, edema or contusion may be considered to have occurred.

*Compression or Transection of the Spinal Cord.* Serious injury to the spinal cord frequently accompanies fracture-dislocation. These injuries include compression and transection Figs. 11, 12, 13. Compres-

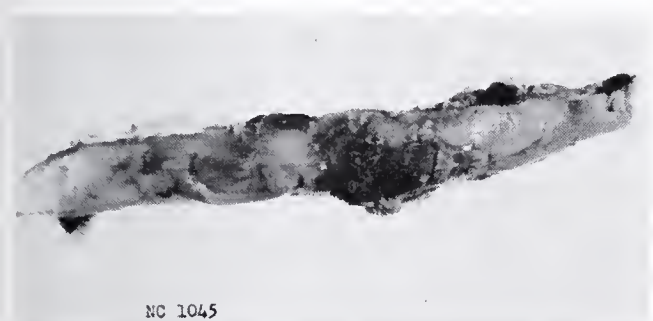


Fig. 11  
Contusion Cervical Spinal Cord. (Autopsy specimen, Courtesy Dr. C. B. Courville)

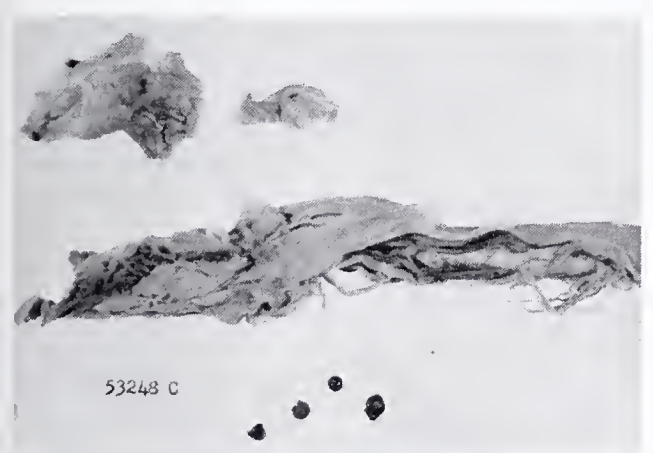


Fig. 12  
Severe contusions of cauda equina from lumbar fracture. (Autopsy specimen, Courtesy of Dr. C. B. Courville)

sion injuries of the cord commonly reduce the nervous tissue to a custard-like pulp. Lesser degrees of compression cause varying degrees of demyelination. These injuries are the common causes for para and tetraplegia.



Fig. 13  
Cyst formation in traumatized cord — late effect of contusion and hematomyelia.

*Laceration of Spinal Cord.* The cord may be lacerated by sharp objects, such as a knife, ice pick, metallic fragments of missiles of war or industrial machines, or by fractured bony spicules. Such injuries may transect the cord or lacerate it to any degree. Occasionally a minor laceration may initiate a hemorrhage into the cord (hematomyelia) with serious loss of neural function.

Another anatomical consideration to be considered in this connection is the relationship of the relative total space occupied by the cord to the size of the spinal canal, which varies greatly at different levels<sup>5</sup> Fig. 14. For instance, severe dislocations can occur between C1-2 without neural damage Fig. 6 and the same is true to a much less degree at the C5-6 level. This becomes apparent when it is appreciated that the anterior-posterior diameter of the spinal canal at C1-2 is relatively much larger in relation to the spinal cord than elsewhere. There is, therefore, more room for movement of the vertebrae at this level without damage to the cord. At the C5-6 interval, the cervical enlargement of the cord decreases this geometric advantage, hence, damage to the cord is more frequent at this level. In the thora-



Fig. 14

Transverse section of vertebra at various levels disclosing relative size of spinal cord to the spinal canal. (After Scarff, J. E., in "Injuries of the Brain and Spinal Cord and Their Coverings." Edited by Brock, S., ed. 3, Williams & Wilkins Co., Baltimore, 1949).

cic levels, the spinal canal is relatively filled with the spinal cord leaving only slight room for forward movement of one vertebrae or the other. In the lower lumbar areas, particularly below the termination of the spinal cord, the cauda equina occupies a proportionately smaller space in the canal, leaving more room for in-driven bone, other foreign material, or an actual displacement of fracture-dislocation. The intactness of the cord also depends on the integrity of the spinal ligaments, particularly the posterior longitudinal ligament. If this structure is torn, the dislocated vertebrae may displace (usually anteriorly) into, or across the vertebral canal and severely damage the spinal cord.

#### INJURY TO OTHER INTRASPINAL STRUCTURES

Anatomically, one must consider the relationship of other structures which may be injured and cause symptoms. These are the nerve roots, the blood vessels and intervertebral discs Fig. 15 A & B. In the cervical region, the course of the nerve roots from the spinal canal to the para-vertebral area is nearly horizontal with only a minimal downward course, whereas in the lumbar region they course downward for a longer distance before they leave the

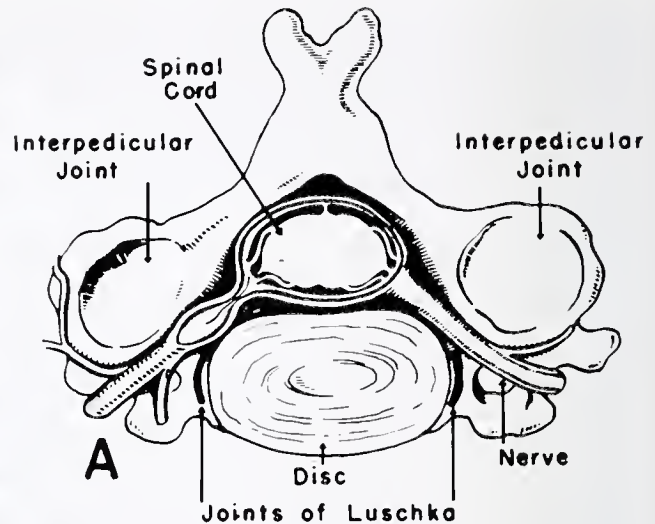


Fig. 15A

Anatomical considerations of cervical vertebrae, its ligaments, and intervertebral disc in relation to the spinal cord and its nerve roots. (After Netter)

spinal canal. In the cervical region these roots are, therefore, somewhat more liable to be damaged and result in neuronal deficits to the neck, shoulder girdle, and upper extremities.

The blood vessels, especially the large cervical venous plexus, are prone to injury resulting in hemorrhages both within and without the spinal canal. The displacement of the intervertebral disc at any level in the spinal canal with its intimate relationship to the spinal nerve roots, leaves the latter vulnerable to damage, and resultant pain, paralysis, etc. Particularly is this true in the mid and

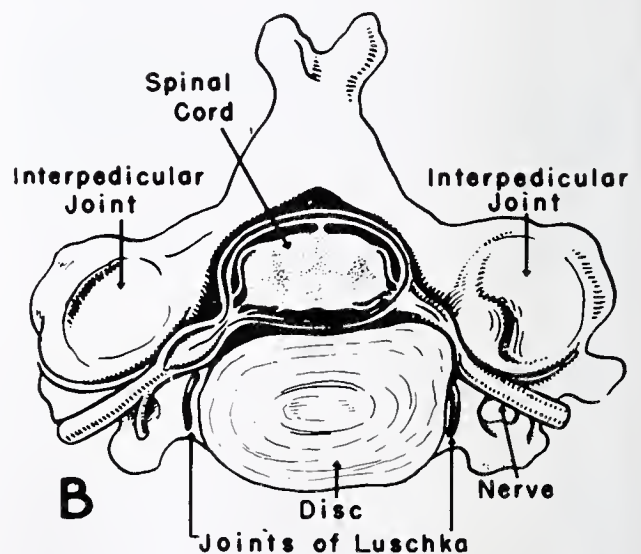


Fig. 15B

Diagram of cervical spine with lateral protusion of intervertebral disc compressing a nerve root. (After Netter)



lower cervical, and lower lumbar regions. If more serious protrusion of the intervertebral disc occurs, particularly if centrally located, severe damage to the cord may occur especially in the cervical region, less frequently in the thoracic levels.<sup>7</sup>

Particular attention should be focused on injuries due to acute flexion of the neck, such as may occur in falls, head-on collisions, which may injure the cord and cervical nerve roots. This mechanism is of special importance in case of a pre-existence of osteoarthritic ridging (lip-ping) along the posterior margins of the vertebrae. Violent acute flexion of the head and neck can contuse the cord and the cervical roots as they are thrust against these transverse ridges. Under these circumstances, roentgenograms of the cervical spine will often show osteoarthritis *without fracture* with some alteration in normal cervical spine contour (straightening or reversal of the curve). This syndrome may be evidenced clinically by flaccid paresis in the upper extremities and paraplegia below. With improvement, recovery of the roots frequently lags behind that of the cord, so that the patient continues to show flaccid paresis or paralysis in the upper extremities (frequently relatively focal), with spastic (mild to moderate) paresis in the lower extremities. In some instances the cord lesion may completely recover leaving varying degrees of a flaccid paresis of the upper extremities.

#### SYNDROME OF ACUTE CENTRAL CERVICAL SPINAL CORD INJURY

In recent years, an increasing amount of interest has been focused on the problem of injuries of the cord consequent to hyperextension and hyperflexion in the neck resulting in compression of the cord (Schneider *et al* 8). The syndrome developed consequent thereto has been called "the syndrome of acute central cervical spinal cord injury." The reports of such cases usually demonstrate the injury may occur consequent to a hyperextension of a hypertrophic, arthritic spine, without compression fracture or fracture dislocation. The patients have been from 50-80 years of age, although a few have been

much younger. Those in the younger age group have usually been associated with fracture-dislocation consequent to the acute flexion mechanism.

Schneider<sup>8</sup> has described the syndrome as follows: This symptom-complex is characterized by a greater degree of motor impairment of the upper than of the lower extremities, by dysfunction of the bladder, usually manifested by urinary retention, and by varying degrees of sensory loss below the level of the lesion. If the findings are caused by hemorrhage or softening in the center of the cord (hematomyelia), there is usually a caudad or cephalad coming with further progression of symptoms, at times culminating in complete tetraplegia or death. If the symptoms are caused by concussion or minimal contusion, with an edematous type of cord involvement, there may be gradual return of function in a definite sequence. The rapidity of recovery depends on the degree of edema present while the amount of recovery is incident to the extent of the true destruction of nervous tissue. The lower extremities tend to recover their motor power first, then function of the bladder returns, followed by recovery of the upper extremities, with the finer movements of the fingers returning last. Recovery of varying degrees of sensory impairment does not follow any set pattern.

Schneider pointed out the importance of suspecting such an injury in the cervical spine in the presence of facial lacerations or contusions of the forehead. It has been shown that when the cervical spine altered by hypertrophic arthritis is hyperextended, there may be simultaneous compression of the anterior cord, caused by a posteriorly displaced bony spur, as well as the posterior impingement upon the cord incident to a wrinkling of the ligamentum flavum. This mechanism was recently effectively demonstrated in myelography on cadavers by Taylor.<sup>9</sup> Taylor also showed that even in young individuals there was a progressive narrowing of the spinal canal in the hyperextended position. He thought that this was due to an anterior bulging of the ligamentum flavum. This mechanism may therefore result in a compression of

the spinal cord. It is recognized that other mechanisms can also result in compression of the cervical cord as has already been mentioned. Some of these can cause acute central cervical spinal cord syndrome. These include compression fractures and some cervical fracture-dislocations. It is difficult, however, to postulate, in case of a compression fracture, whether the cervical spinal cord is squeezed in hyperextension or in flexion of the cervical spine. In the writer's experience, acute central cervical cord injury can occur definitely in acute flexion injury, whether or not accompanied by fracture-dislocation.

Schneider<sup>8</sup> has made a vigorous plea and so served a warning against too vigorous hyperextension of the cervical spine in intubation of elderly patients for the administration of endotracheal anesthesia. Reports have appeared in the literature calling attention to this danger, presenting evidence, at least in one case, in which this anesthetic technique resulted in acute central cervical cord injury, though the patient did gradually recover.

#### TREATMENT OF ACUTE CENTRAL CORD INJURY

Conservative management is the most satisfactory in patients with acute central cervical cord injury. Some type of traction should be provided, preferably of skeletal tongs of some type, with the traction applied directly in the line of the body. This should be continued until the spinal cord edema has subsided. This usually requires about four weeks, at the end of which time a collar may be substituted for the traction apparatus for a period of another 6 to 8 weeks, or possibly longer. Patients who demonstrate this syndrome with associated fracture—dislocation, and subarachnoid block (as demonstrated by jugular compression test) need immediate operation for decompression of the spinal cord. It is assumed that traction has already been applied, and an attempt has been made to reduce the dislocation before this decision is made.

Fortunately, this group of patients with the acute central cervical spinal

cord injury syndrome, has a good prognosis. As the cord edema subsides, recovery follows the pattern already described. The recovery may not always be as good as intimated by Schneider, especially if cervical spinal nerve roots are damaged at the same time. Under these circumstances, it may take 1 to 3 years for recovery to take place. Injury to these roots is indicated by atrophy of the appropriate muscle groups and proven by electromyographic examination.

#### OTHER SPINAL INJURIES

A variety of traumatic incidents may result in a herniation of a cervical intervertebral disc<sup>7</sup>, with little or no radiographic evidence of this lesion as indicated on routine x-ray films. If the herniation occurs laterally, the consequence, though painful, may not be as serious, leaving tell-tale nerve root signs to indicate the site of the protrusion. Acute neck-shoulder-arm pain, paresthesias, sensory changes and motor weakness are usually present. The particular dermatome or myotome involved will depend on which root is being compressed. If the herniation is "central" (midline), compression of the cord itself will ensue resulting in a tetraparesis or tetraplegia. This may occur suddenly with transection of the cord or develop slowly following trauma. In the latter instance, there may be time for cervical laminectomy and removal of the protruded disc before irreparable damage to the cord has taken place.

Less serious injuries to the cervical vertebrae may occur from a variety of mechanisms. Fractures of vertebral processes, especially the spinous process, and chip fractures of the bodies can be caused by the extension-flexion (recoil or "whiplash") mechanism.<sup>10, 11, 12, 13</sup> Either this Fig. 16, or some other mechanism, may cause fracture of the annulus fibrosus with protrusion of the disc into the spinal canal or intervertebral foramen with consequent compression of the spinal cord or nerve root. More commonly, lesser injuries accompany the same mechanism, such as a simple neck sprain, capsular (joint) and ligamentous tears with associated neck stiffness, soreness, limitation



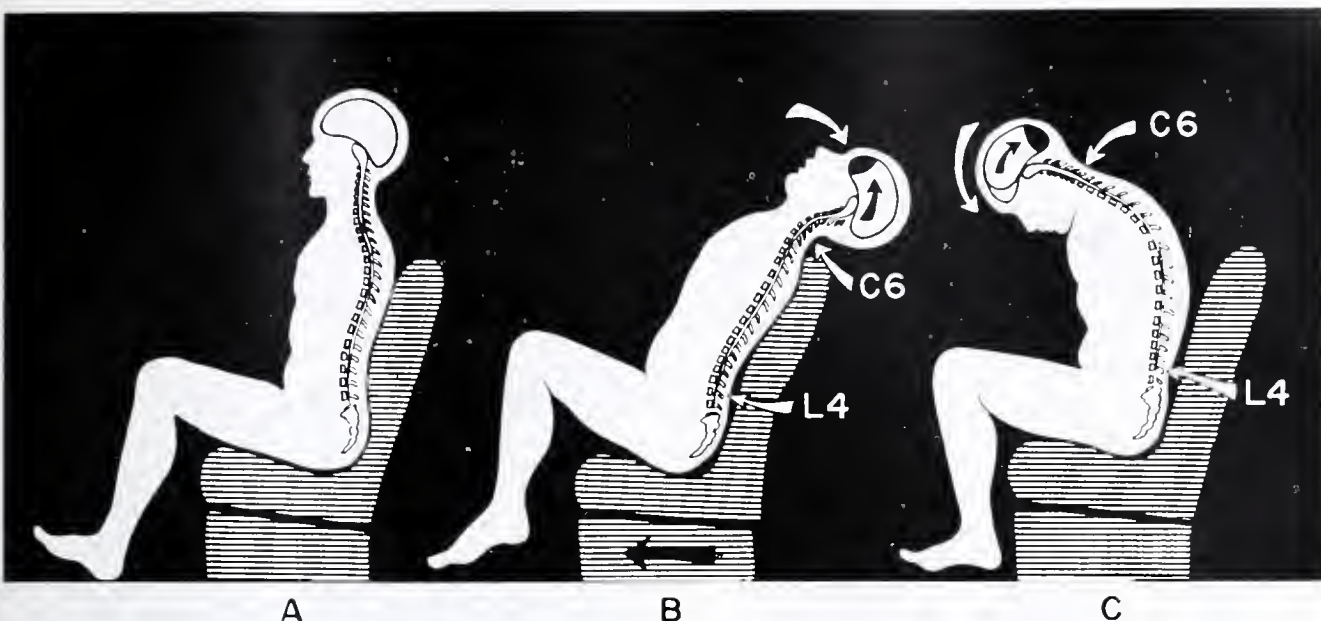


Fig. 16

Whiplash injury mechanism (Extension-Recoil) from rear end collision.

of motion, straightening of the normal cervical spine curve and in some instances radicular pains (Gay and Abbott).<sup>10</sup> If cervical osteoarthritis is present, such injuries frequently are more painful and enduring than otherwise. Subluxations of cervical vertebrae of minor degree may also occur at any level. These at times fail to show up radiologically Figs. 17, 18, 19 unless the lateral x-ray views are made in ex-

tension, neutral and flexion positions. The subluxation may appear in one of these views.

*Sacral fractures* are not rare Fig. 20. They may be almost any type, but transverse fracture with depressed fragments into the canal have been more common in the writer's experience. Pain in the sacrum radiating into the perineum, the buttock, and the course of the sciatic nerve, com-

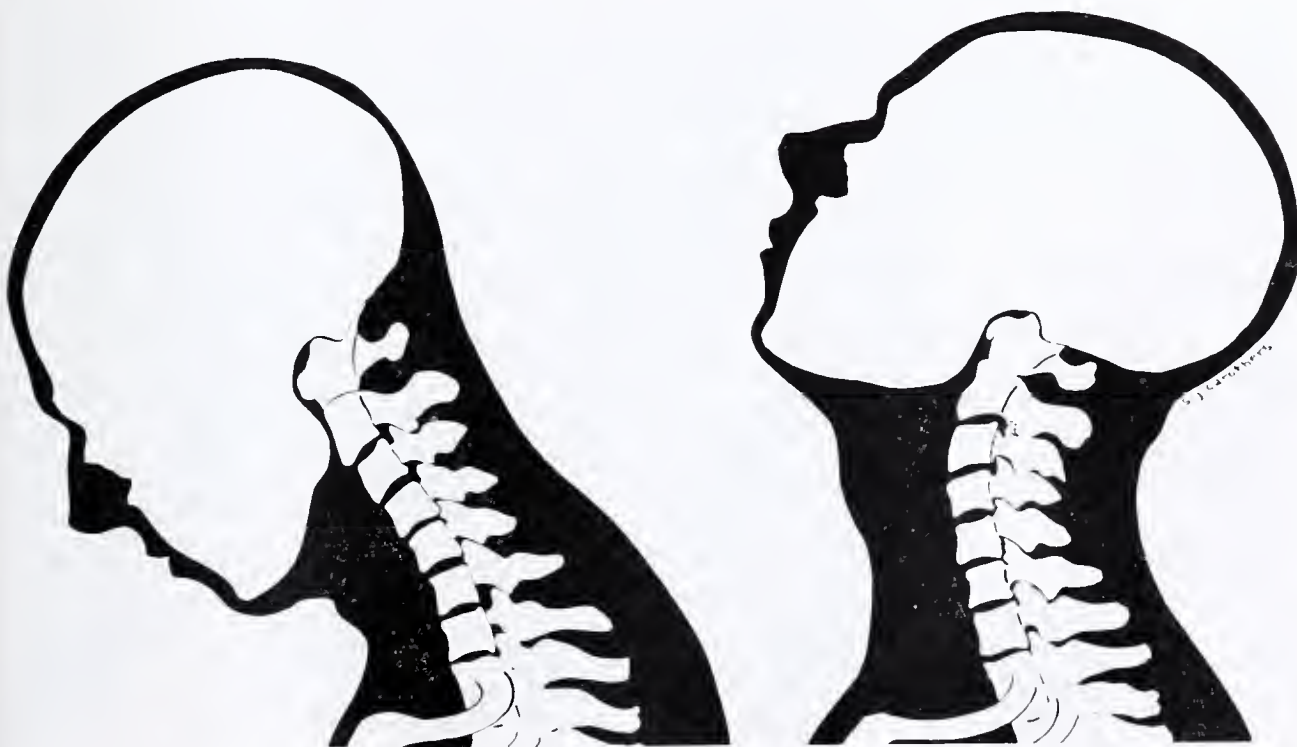


Fig. 17

Line drawings from lateral x-ray, of normal cervical spine, as seen in flexion and extension.

monly follow. Occasionally interference with sphincter control may occur. Careful exploration with elevation of the offending bone may be all that is necessary.

Rarely is a nerve root lacerated, though this does happen and suture of the root may be necessary.

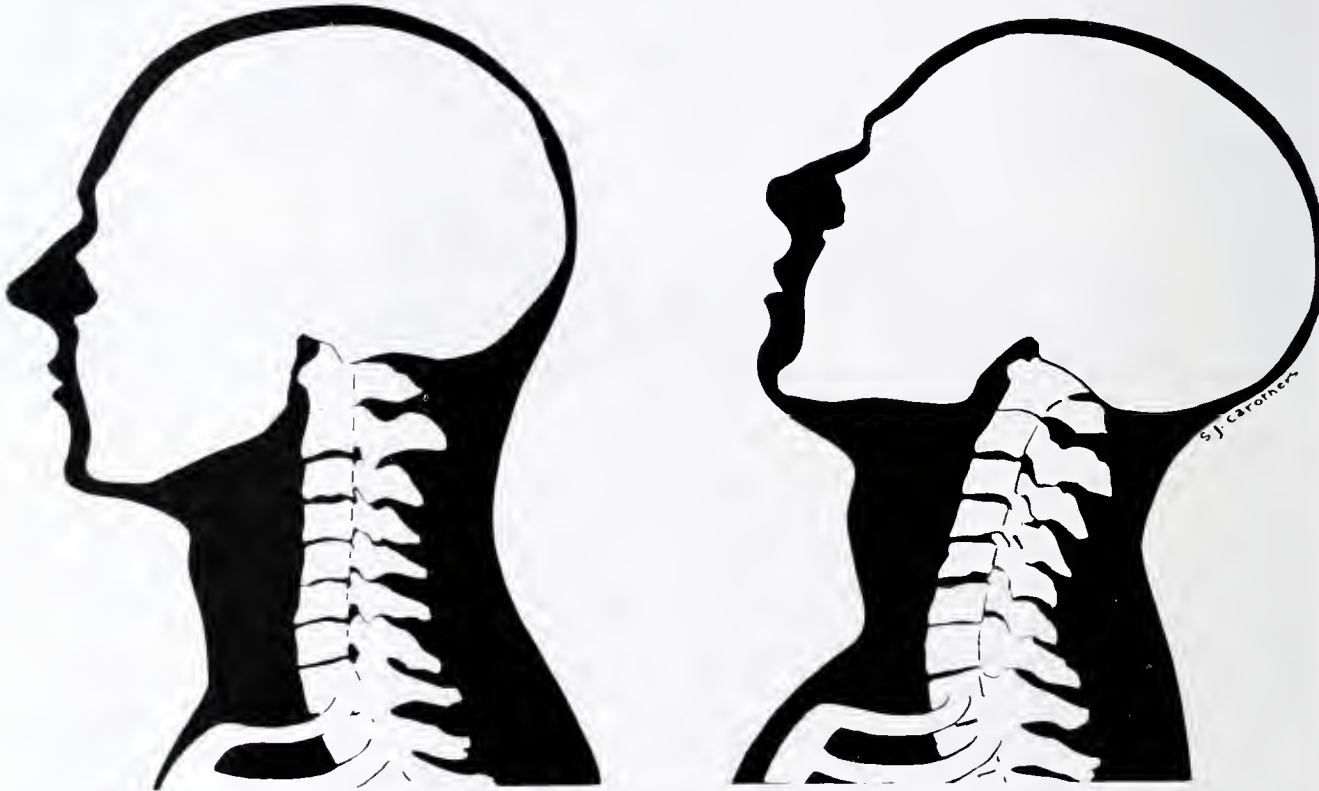


Fig. 18

Line drawings of lateral x-rays of cervical spine showing straightening of cervical spine in neutral and extension positions.



Fig. 19

Line drawing showing slight subluxation of C2 on C3, lateral view, with head in flexion; note how it disappears in neutral position.



MANAGEMENT OF THE SPINE INJURED  
PATIENT

Injury to the vertebral column does not necessarily indicate an injury of the spinal cord. Likewise, injury of the spinal cord and its roots may occur without evident injury to the bone. It is, therefore, evident that careful evaluation of the injured patient is always indicated to (1) determine the degree, site and type of injury, (2) prevent further injury to the spine, spinal cord and nerve roots, and (3) to evaluate the patient in general. He is *not* just a spine-injured patient, ever so important as the spinal injury may be Fig. 21. A careful meticulous examination with extreme caution as to moving the patient is mandatory.

Every individual who complains of a spinal injury of any type merits a careful physical survey for (1) evidences of paralysis, (2) focal tenderness, (3) deformity in the back, and (4) a possible penetrating wound. If paralysis is present, the level of the lesion may be evidenced by noting the "sensory level" Fig. 22, where, and how far up sensation is lost, and to what degree it is lost, and what sensory mod-



Fig. 20  
Transverse sacral fracture (arrow).

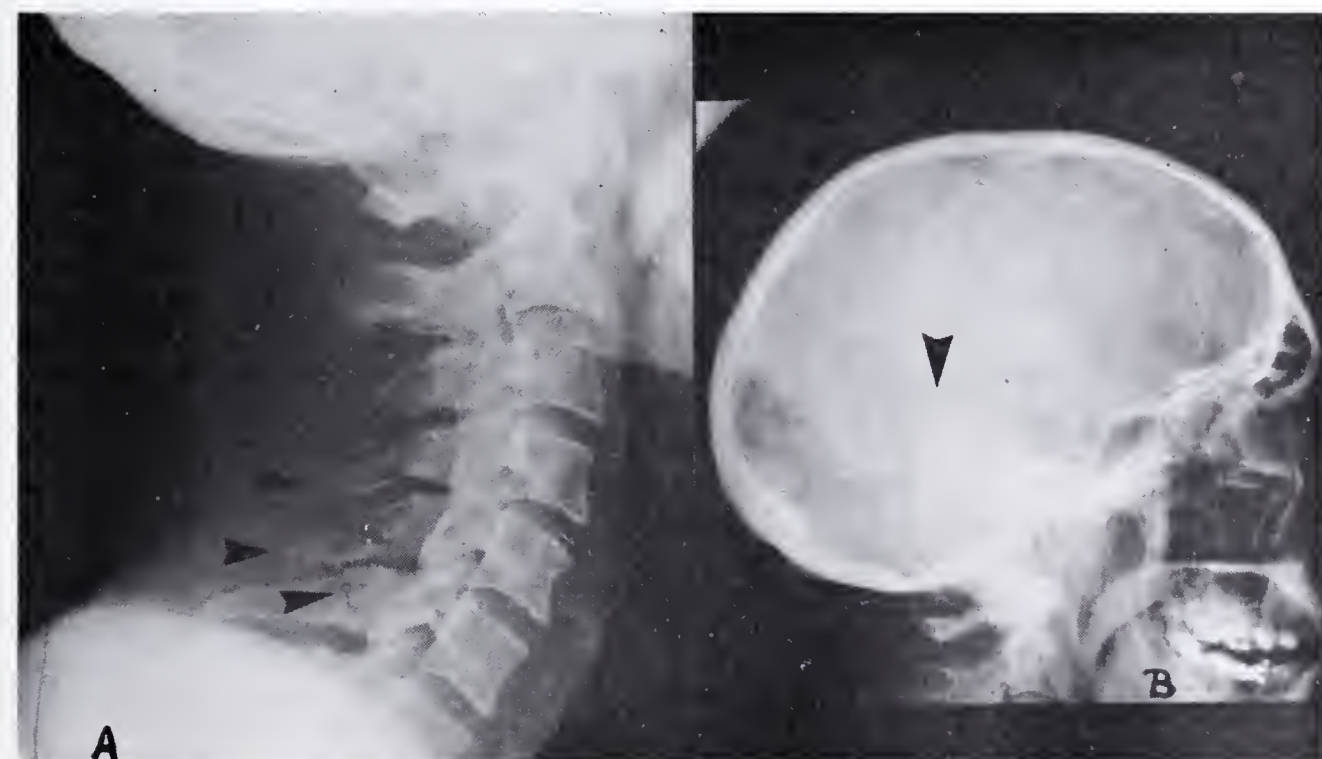


Fig. 21  
(A) Fracture cervical spinous processes C4, 5, 6 (arrows) from blow to back of neck.  
(B) Linear skull fracture (arrow) in same patient)

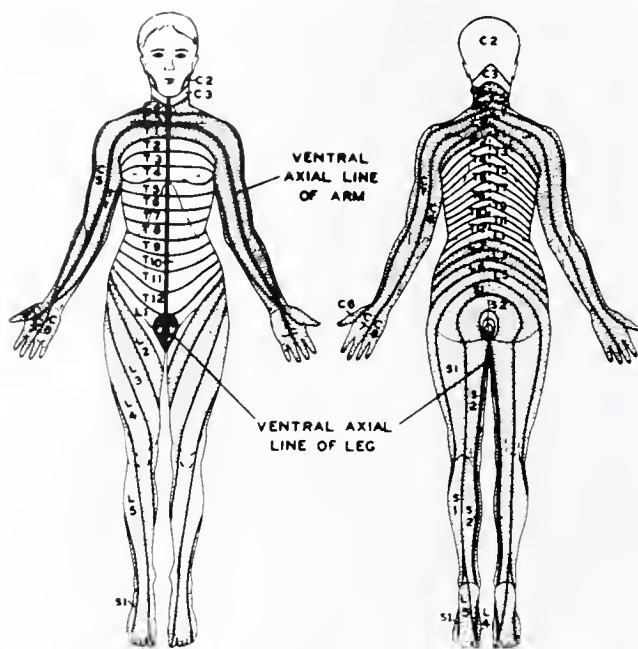


Fig. 22

Dermatome chart showing the distribution of spinal nerve roots. (After J. J. Keegan)

alities are affected. If all sensation is lost up to a certain level, this may be compared with sensory charts (see diagram), or by noting the loss of motor function and comparing it with the known radicular nerve supply to the muscles at this level. When this is known, it is well to remember that the vertebral level of the lesion may be from the level noted by sensory and/or motor changes to four vertebrae above this. This will depend on the severity of the lesion, the presence or absence of nerve root damage at the level of the injury, as well as the anatomical level of the lesion. Since the spinal cord ends at the level of T12 to L1, it is obvious that a lesion here demonstrates symptoms from only sacral cord involvement (conus medullaris) with sphincter loss with sensory and motor deficits affecting the buttocks, posterior thigh and leg, up to and including all roots from T12 to S5; that is, complete motor and sensory paralysis of the lower extremities.

In the thoracic levels, the sensory level is most liable to fall below the actual level of the vertebral injury by two to four segments. In the cervical region the sensory level may approach the level of the vertebral injury. Likewise, the motor level may be at the level of vertebral injury.

With these facts in mind, the physician is better prepared to begin his examina-

tion of the injured patient. The less one handles the patient, the less chance there is for further damage to the spinal cord and its roots. Therefore, the old dictum of "splint them where they lie" is as good today as it was in the years of our forefathers.

To examine such a patient, all that one needs in addition to close observation, is a sharp point of some type (a pin), if handy, and a percussion hammer. Observe if the patient fails to move spontaneously any part of his body. One may begin at the head and work down, or vice versa, observing muscle movement and sensations, noting where absent or partially lost. Reflex changes may or may not be present. If conscious, the patient may be asked to try to use his limbs. A systematic approach to this is helpful. Reflexes may be absent (in spinal shock) from more serious injuries to the cord, or hyperactive when less damage has been inflicted upon it. Not infrequently no changes may be evident. Babinski signs, if present, indicate some interference with the pyramidal tracts, but do not give any definite clue as to where along their course the damage may be. The site of spinal tenderness may be helpful and certainly palpation for deformities is of localizing value.

If consequent to the examination, the patient is suspected to have a cervical injury, then *before he is moved, a head halter must be applied* and some 15 lbs. weight or more applied in the direction of the spinal axis ("neutral" direction). Roentgenograms of the cervical spine may then be taken. In order to obtain lateral views of the entire cervical spine, it is usually necessary to apply counter traction (caudalward) to each upper extremity; otherwise, the lower 2 or 3 cervical vertebrae are not visualized. By such a technique, one frequently obtains a roentgenogram of the lower cervical and first dorsal vertebrae. All too frequently a fracture, or fracture-dislocation in the lower cervical region is overlooked if the roentgenogram fails to show all the cervical vertebrae.

If no fractures are noted in the anterior-posterior and lateral films, then fur-



ther films may be indicated such as (1) open or moving jaw, AP view for the odontoid process, (2) mild to moderate flexion and extension lateral view of the cervical spine. These may disclose a dislocation at C1-2 when not noted in the "neutral" lateral view and when the AP view of this area is inadequate or they may show subluxations or more serious dislocations elsewhere in the cervical spine, which were reduced due to the head traction already applied. Lateral films may prove the absence of a demonstrable fracture, but give evidence of trauma as shown by soft tissue swelling such as retropharyngeal thickening (in acute extension-flexion neck injuries). Oblique views of the cervical spine are of particular value to show the intervertebral foramina and bony injuries about them. Occasionally a chip fracture in this area will be seen. If a fracture line is not demonstrated, evidences of osteoarthritis ("lip-ping") along the posterior margins of the adjacent vertebrae is of importance since in acute flexion-extension of the neck, serious injuries to the cervical cord and its roots may occur. In lumbar and dorsal spinal injuries, the AP, lateral and ob-



Fig. 24

Crutchfield tongs in place for skeletal traction for cervical spine fractures.

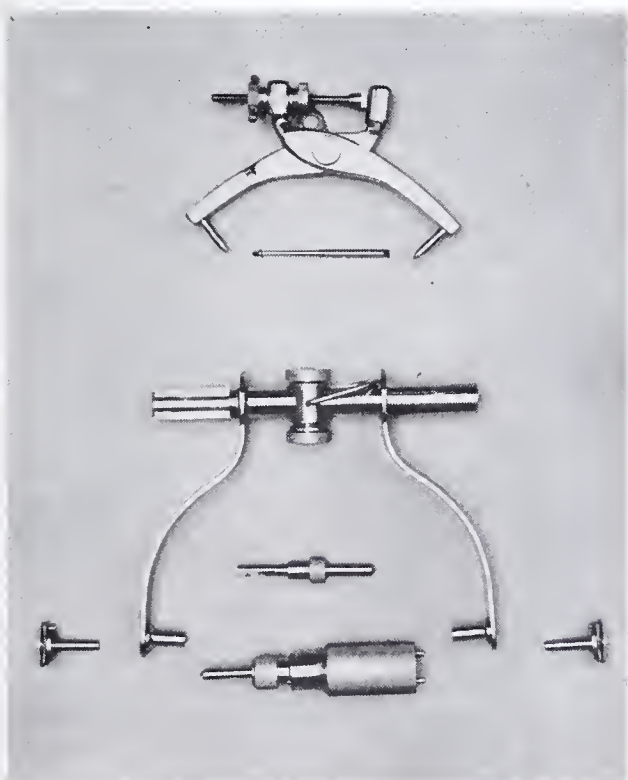


Fig. 23

(Upper half) Crutchfield tongs & drill; (Lower half) Vinke tongs, drill and diploe cutter — for skeletal traction for cervical spine fractures.

lique views of the spine usually disclose the site of the injury.

Once the x-ray films have been seen, the plan of therapy may be outlined.

*Cervical Fractures.* Every hospital, no matter how small, should be equipped to handle such injuries, even if only temporarily. If a fracture dislocation is present in the cervical region, rarely is it excusable to leave a head halter on for more than a few hours. While the patient is still "on the board" and at least before he is sent to his room, some sort of skeletal traction should be applied, either Crutchfield or Vinke tongs or some modification of them Figs. 23, 24, 25. They are very easily and quickly applied even under somewhat difficult circumstances. Once in place, the patient seldom complains of such contrivances. On the contrary, even at its best, the head halter is a most uncomfortable device, not infrequently painfully excoriating the chin. Skeletal traction is not painful, and the patient is much more easily handled for any surgical procedure, including



Fig. 25  
Vinke tongs in place for skeletal traction  
for cervical spine fractures.

craniotomy and laminectomy, if and when such is needed. The writer has encountered two patients with C1-2 dislocations with intracranial collection of blood necessitating craniotomy, one with subdural hemorrhage and the other with epidural hemorrhage. In another patient with C5-6 fracture-dislocation, a subdural hemorrhage was successfully evacuated in the presence of head tongs.

Traction for cervical fractures is usually applied in the longitudinal axis of the spine. The amount of traction varies according to the situation. This may amount to 15 to 40 pounds, the heavier weight being applied more commonly in an attempt to overcome locked facets. Changes in the line of traction are made as dictated by the roentgenograms. Lateral x-ray views of the cervical spine are usually all that are needed to follow the reduction of the fracture and/or dislocation. These may be made as soon as traction has been applied. If reduction is not apparent, weights are added to the

traction and films made every few hours until reduction is obtained. After this, it is well to reduce the weights at 12 to 24 hour intervals, or more often if indicated, until the least amount of weight is applied that will maintain the alignment of the cervical vertebrae. Frequently this will be from 12 to 15 pounds. Cervical fractures without damage to the spinal cord or roots may be managed by immobilization, but a few patients will need traction. This may be managed while ambulatory with the cervical trapeze, through which traction is maintained.

*Adequate Airway.* Either because of loss of, or interference with, intercostal breathing, or because of concomitant chest (thoracic cage, lung, bronchial or even tracheal) injuries, there may not be adequate respiratory ventilation. The failure to clear tracheobronchial secretions further obstructs the respiratory passages. Rapidly progressive deterioration of respiratory physiology occurs if an adequate airway is not obtained and maintained. Oropharyngeal aspiration is frequently inadequate, as also may be tracheobronchial aspirations, which must be instituted early in the care of such patients. Tracheostomy will then be life saving and should be performed early before the lungs become obstructed with tracheobronchial secretions. *Keep a clear and adequate airway at all times.*

*Rotary Bed.* The best type of bed with which to manage the neck injured patient and also many lumbar and dorsal fractures, is a rotator type such as the Stryker or Foster bed. The patient can then be turned from back to abdomen to back, without interfering with the traction and cervical alignment. Nursing of the patient is made much easier under such control. The patient should be turned at least every four hours and more often if possible.

*"Alternating Pressure Pads."* In order to prevent constant pressure on the skin and subcutaneous tissue, W. James Gardner<sup>14</sup> of Cleveland devised a mattress that alternates pressure areas by a multiple cell mattress — "alternating pressure pads" Fig. 26. Other methods to avoid pressure necrosis of the skin in the spinal cord injured patients are (1) use of fleece under sacrum, shoulder and heels and (2)





Fig. 26

Gardner alternating pressure pad as it appears upon the bed, with activating motor seen at foot of bed. This is to be used with paraplegic or tetraplegic patients so as to avoid constant pressure and the resultant decubiti.

scrupulous cleanliness and utmost in nursing care and cleanliness.

**Urinary Management.** Objects to be achieved in urinary tract management are (1) avoid overdistention, rupture, or contraction of bladder, (2) avoid and/or control infection, (3) establish an automatic bladder, and (4) keep the patient's skin free of urine to avoid excoriation and formation of decubitous lesions. Immediate catheter drainage of the urinary bladder is mandatory. It is wise to use either intermittent drainage, or resort to Munro's tidal drainage, or some modification of this. Bladder irrigation with normal saline or a mild antiseptic aqueous solution (Zephiran, Merthiolate, Furan-dantin) once or twice a day, will aid in suppressing urinary infections and accumulations of sediment. There is no consensus concerning the routine prophylactic use of sulfa or furisol compounds, or antibiotics, but all agree in their use therapeutically. Frequent cultures of urine with "sensitivity tests" to anti-bacterial drugs and antibiotics are indicated.

There is considerable difference of opinion concerning the use of supra-pubic drainage. If bladder neck resection and intermittent bladder evacuation results in an automatic bladder, certainly the use of

the anatomic urinary passages is the more desirable. When this is not possible, then other methods must be resorted to, such as the penile clamp (loss of sphincter control), suprapubic cystostomy (sometimes best in females), urethral transplants into colon (in contracted, diseased bladders, etc.), or ureterostomy under similar conditions. Time does not permit a more detailed survey of the difficult problems that may arise. Consultation with a urologist under such circumstances is very desirable.

**Gastro-Intestinal Tract.** Spinal cord injury of serious degree frequently causes changes in motility of the gastro-intestinal tract, with vomiting, acute gastric dilatation Fig. 27, and paralytic (neurogenic) ileus. Close observation for these possible concomitant problems may avoid a disaster. No liquids or foods are allowed in the first 24 to 48 hours. The necessary fluid should be given intravenously. If vomiting persists, and/or evidence of acute gastric dilatation, or paralytic ileus appears, then some type of Wangenstein suction must be instituted. The problems of electrolyte balance must then be fol-



Fig. 27

Splintered ("shattered") C7 vertebral body with Brown-Sequard syndrome and left C8 root laceration. Levine tube in place because of acute gastric dilatation.

lowed by serum sodium, potassium, and chloride determinations. Frequently, these changes can be corrected by use of one of the ready prepared "electrolyte" solutions available in most hospitals. Gastro-intestinal motility may be improved by the use of suitable para-sympathetic stimulants such as Prostigmine (1:200-1cc every 30 minutes to 2 hours prn.), and Ilopan (Warren-Teed).

*Diet.* It is wise to avoid constipation by adequate bulk in the diet. Fruits and prunes may be of help, "bulk" laxatives may be of value, and mild stimulant cathartics such as "Modane" (Warren-Teed), Ilopan or Prostigmine. Whenever normal gastric and bowel motility returns, a liquid diet (water, broths, gruel, etc.) may be started. The Levine or "poly-tube" should be removed as soon as possible and the diet increased as tolerated. High protein diet appears to be the best in view of the catabolic processes going on.

*Indications for Surgery in Recent Spinal Injuries.* Whenever possible, spinal fractures are treated by closed reduction, traction for fracture in the cervical region; positioning, usually hyperextension or lying on a flat surface in fractures of the thoracic and lumbar vertebrae. In cervical fractures the majority need only skeletal traction as outlined above. However, there are certain fairly clear indications for surgical intervention in spinal fractures.

Compound injuries must all be debrided and closed, particular attention being given to careful closure of the spinal dura when possible. Open wounds obviously will lead to early development of meningitis if not debrided and closed as quickly as possible. Intraspinous foreign matter including metallic fragments must be removed.

Compound comminuted spinal fractures must be treated in a similar manner with care taken in decompressing the cord so as not to incur further damage to it when elevating or rongeurizing the affected bone. Radiologic evidence of indriven bone fragments indicate prompt surgical removal from any part of the spine.

Spinal subarachnoid block, as evidenced by lumbar puncture with jugular compression, may be an indication for laminectomy, but not in every case, since edema of the cord may do this. Opening of the spinal dura will then be disastrous because of herniation and maceration of the spinal cord. Spinal subarachnoid block may be occasioned by hematomyelia. When it is not possible to differentiate between edema and hematomyelia, then a small dural opening with careful needle aspiration may be diagnostic. With aspiration of liquified blood, decompression may be sufficient to allow further opening of the dura and inspection of the cord. *Locked facets* or *locked bony fragments* may prevent adequate reduction of a cervical or lumbar fracture Fig. 28 A, B. Facetectomy or removal of the obstructing bone may be all that is necessary to effect a reduction. Occasionally removal of a lamina and part of a pedicle is necessary.

In the presence of fracture-dislocation in the thoracic and lumbar areas with com-



Fig. 28-A

Fracture-dislocation C4 on C5 (C4 anterior) (a) lateral x-ray view taken on entering hospital (b) incomplete reduction (locked facet) after repeat attempts with prolonged traction using Vinke tongs; (c) After reduction and wiring of spinous processes.





Fig. 28 (b)

Fracture-dislocation C4 on C5 (C4 anterior) (a) lateral x-ray view taken on entering hospital (b) incomplete reduction (locked facet) after repeat attempts with prolonged traction using Vinke tongs; (c) After reduction and wiring of spinous processes.

plete loss of function in the spinal cord, open reduction or surgical decompression may be justified, even when the paraplegia or cauda equina syndrome appeared simultaneously with the trauma. Such a procedure rarely relieves the paralysis since all too frequently such an injury leads to crushing the cord to a pulp or transection of the cauda equina. However, in the dorsal levels, it might save a part of the cord, or an intercostal nerve; in the lumbar region a nerve root or more may be spared; in both areas a careful debridement may prevent the painful radiculitis which often develops in later weeks and months. To those so injured, even one nerve spared may be of considerable help when rehabilitation begins.

*Late Indications for Surgery.* In the course of the care of the spinally injured patient, the indications for surgery may not be as clear-cut or as well agreed upon as are those indications for immediate surgical intervention after injury. However, the indications for delayed inter-

vention may be stated as (1) when there is delayed or persistent subarachnoid block (particularly if there has been arrested progress in return of nervous function), to relieve arachnoid adhesions and/or cyst formation with compression of the cord. (2) persistent radicular pains (adhesions, compression of roots, etc.) frequently require rhizotomy, or anterolateral cordotomy, in some cauda equina injuries, may be indicated, (3) severe muscle spasms may require release of adhesions or more often, anterior rhizotomy, (4) in the management of the urinary system problems transurethral bladder neck resection may be necessary, or supra-pubic cystostomy, to overcome urinary retention, (5) in the treatment of decubitus ulcers, surgical excision with skin flap closure has proved useful, (6) non-union of fracture-dislocation Fig. 28C, Fig. 29, after three months or more of immobilization, may be corrected in the case of C1-2 fracture by fusion of C1-2 to the base of the skull. Wiring elsewhere in the cervical spine of the



Fig. 28 (c)

Fracture-dislocation C4 on C5 (C4 anterior) (a) lateral x-ray view taken on entering hospital (b) incomplete reduction (locked facet) after repeat attempts with prolonged traction using Vinke tongs; (c) After reduction and wiring of spinous processes.

spinous processes may afford sufficient stabilization to allow union to occur Fig. 28C. If not, some type of an "onlay" spinal fusion is indicated.

*Control of Muscle Spasms.* This is not always possible, though desirable and imperative as it may be. Meticulous debridement when surgery is indicated is of help. Rhizotomy when radicular pains are present may be indicated. More commonly careful attention to the management of the urinary tract problem often prevents spasms or relieves them when they appear. The same may be said, to a lesser degree, for gastro-intestinal tract disturbances. Avoidance of any irritat-



Fig. 29

Craniospinal fusion (skull C1-C2) for fracture dislocation C1-2 with nonunion. Lateral x-ray view taken one year after surgery.

ing factors may be helpful. Medications are of some help, and these include mephensin (preferably in the form of the carbamate (Tolseram) in doses up to 15 or 20 grams a day may be tolerated); Prostigmine bromide, 15-30 mg. every 4 to 6 hours; curare or curare-like drugs are of only temporary value, and at times most difficult to handle unless under close control by the physician. Other drugs which may be tried are zoxazolamine (Flexin), chlorzoxazone (Paraflex) alone or in

combination with acetaminophen (Parafon). When the paraplegia is known to be permanent and the muscle spasms are severe, then anterior (motor) rhizotomy or cordectomy is indicated, and gives much relief. Occasionally cordectomy is indicated.

#### MEDICOLEGAL ASPECTS OF SPINE INJURIES

With the increase in industrial as well as vehicular injuries, the physician, like it or not, will often become entangled in the medicolegal aspects of such injuries. It is, therefore, of great importance that he take cognizance of this and prepare himself by making detailed reports to be ready for detailed questioning in court. He must also consider the possibility of his being sued for the manner in which he handled the patient with a fractured spine. It will therefore, be pertinent to say a few words about this aspect of the medicolegal problem.

First of all, it is of prime importance that the physician recognize the possibility of a spinal fracture and make an adequate x-ray examination. We have already seen that frequently it is necessary to x-ray the entire spine with both anteroposterior and lateral views. In cervical fractures, x-rays in the lateral view with slight to moderate flexion and extension may also be necessary. If the clinical signs suggest the presence of a fracture, even if the x-rays are "negative," the patient should be treated as if a fracture were present. Failure to do so might result in further damage to the spinal cord and most assuredly open the door for a malpractice suit. This has occurred not infrequently. Failure to follow accepted therapeutic measures with use of skeletal traction, hyperextension and surgical intervention where indicated with proper management of bladder, bowel and skin, might well be open to question.

Careful records kept by the physician from day to day are also important safeguards against legal action. Many of these difficulties can be avoided by the judicious use of orthopedic and neurosurgical consultation. Although the outcome of the status of the spinal cord may not be changed, the responsibility may thus be shared. Future complications may be likewise avoided.



# SUMMARY

Injuries of the spine and spinal cord are thought to represent from 2 to 12% of all body injuries although exact figures are not available. Mechanisms of injury to the spine and spinal cord, and the pathology encountered have been reviewed. It is noted that not all spine injuries necessarily also involve the spinal cord; the converse to this fact is also true. Special attention has been given to injuries to the cervical spine and cervical spinal cord, from the more severe transections of the cord associated with fracture-dislocations on one hand to the mild neck sprains on the other. A discussion of acute central spinal cord injury without spinal fracture but usually associated with cervical osteoarthritis is also entered into.

Emphasis is placed on the conservative or closed reduction management of cervical spine and spinal cord injuries. Many may be handled with head tong traction and proper positioning.

Indications for surgery in the immediate post injury period as well as those for a later period have been outlined.

The medicolegal aspects of these injuries have been noted emphasizing the physician's responsibilities.

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# A Clinical Study of Triacetyloleandomycin\*\*

## In Urological Infections

ARCHIE L. HEWETT, M.D.\*

A study of antibiotics or combination of antibiotics to combat genitourinary tract infections has been given great emphasis in the recent literature. Oleandomycin alone and in combination with various broad spectrum antibiotics has been a part of this recent research for better therapeutic agents as evidenced by a number of clinical papers which have included investigation concerning treatment of urinary tract infections and diseases produced by Gram-positive organisms (1-9). Such is shown by the investigation of Semans and Glenn in which they effected a success rate of approximately 80% against Gram-positive organisms using a combination of sulfasoxazole and oleandomycin (10).

Recently a new derivative of oleandomycin was synthesized in a tri-ester form, triacetyloleandomycin.\*\* In a study by English and McBride, triacetyloleandomycin showed excellent protection in mice against experimental infections produced by seven antibiotic-resistant staphylococci (11). These same organisms were resistant *in vitro* to penicillin, streptomycin, chlortetracycline, oxytetracycline and tetracycline. The drug was investigated by Shubin and was discovered not only to give a consistently higher blood serum level than oleandomycin alone, but also to be recovered in a higher percentage in the urine (oleandomycin 10.2% and triacetyloleandomycin 23.5%) (12). With such a concentration in the urine known, a study was undertaken to determine the effectiveness of the drug alone in various types of urinary tract infections. This investigation was conducted by the Urological Department of the University of Arkansas School of Medicine.

### CLINICAL RESULTS

The study of triacetyloleandomycin was conducted over a two-month period in

which clinic patients were treated with the drug for a twelve-day period. Prior to any oral administration of the drug, a sterile urine culture was obtained. A similar urine culture was obtained on the same day the drug was discontinued. The same dosage, 250 milligrams every six hours orally, was given each patient irrespective of his particular urinary tract infection. Patients were chosen to receive the drug on the basis of symptomatology and pyuria. No limitations were placed on any particular part of the urinary tract infected, and patients were chosen at random. No discriminations were made between the men and women, age or race, nor the length of time their urinary tract infection had been present. Ages ranged between thirty and eighty. A variety of genitourinary tract conditions were represented. Upon the patient's return visit he was questioned as to side effects from the drug and examined for any outward signs of drug sensitivity. Improvement was graded as mild, moderate, marked or no improvement. Neither blood serum levels nor urine excretion levels were determined. Most of the organisms exposed to the drug were of the coliform type. The criterion for "cure" was whether or not the final urine culture was negative. However, with chronic infections such as chronic pyelonephritis, hydronephrosis, strictures, benign prostatic hypertrophy, etc. an adequate and just evaluation was impossible.

The results of the clinical trial of triacetyloleandomycin are summarized in Tables 1 and 2, pages 408-411.

### DISCUSSION

Forty cases were studied. Seven patients were "cured," and those initial urine cultures showed *Proteus morgani*, *A. aerogenes*, *Micrococcus albus* (staphylococcus) and alpha hemolytic *Streptococcus*. Twenty-one of the forty cases had *E. coli*, with eleven of those showing an associated *Aerobacter aerogenes*. *A. aero-*

\*\*The trade name for triacetyloleandomycin is TAO, J. B. Roerig and Company (Div. Chas. Pfizer & Co., Inc.).

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*genes* proved sensitive in only three of these cases, but it was eliminated from the urine when it was the only organism present. There were two cases of *Proteus morgani*, one case of *Pseudomonas aeruginosa* and *Paracolon bacillus*, two cases of *Proteus sp.*, two cases of alpha-hemolytic *Streptococcus*, three cases of *Micrococcus albus*, six cases of *P. aeruginosa*, and one case of *Proteus vulgaris*. It is interesting that *E. coli* was never eradicated from any urine specimen after the prescribed amount of drug had been taken, and that both *E. coli* and *A. aerogenes* appeared on the final urine culture in the patient whose initial urine revealed alpha hemolytic *Streptococcus* only. *P. aeruginosa* was not susceptible to the drug. Twenty-three cases showed marked improvement in symptoms, nine cases showed moderate improvement, and eight cases showed mild improvement.

#### TOXICITY

Generally, all patients tolerated triacetyloleandomycin well. Only two patients complained of any ill effects, and in both instances this was temporary mild nausea promptly after ingestion of the drug. There was no overt evidence of side reactions in any patient. Larger doses of the drug were given to several patients not included in this series, and none gave evidence of intolerance or signs of toxicity. One patient was given 250 milligrams every six hours for thirty days with no side effects.

#### SUMMARY

Forty patients with a variety of urological diseases infected by one or more types of pathogenic bacteria were treated with triacetyloleandomycin over a twelve-day period. The following results were noted:

*Staphylococcus albus* and alpha-hemolytic *Streptococcus* were eradicated from the five urine cultures containing Gram-positive organisms.

All urine cultures containing Gram-negative organisms were not affected by the drug except *A. aerogenes* and *Proteus morgani*, which proved sensitive. The effectiveness of the drug against most Gram-negative organisms is moot.

No evidence of toxicity to triacetyloleandomycin was found in the dosages prescribed.

Approximately 58% of the patients showed marked improvement in their symptoms regardless of whether their urine was cleared of infections, 23% showed moderate improvement and 20% showed mild improvement. All patients reported some improvement in their symptoms.

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TABLE I

Name	Unit Number	Age	Sex	Diagnosis	Treatment	Culture		Toxicity	Improvement
						Before Treatment	After Treatment		
1. E.B.	001374	44	M	Pyelonephritis, urethral strictures	TAO, 250mg. every 6 hrs. for 12 days	E. coli	E. coli	None	Moderate
2. F.K.	A70933	46	M	Renal calculus	" "	E. coli	E. coli	None	Marked
3. N.M.	A66708	60	M	Urethral stricture	" "	A. aerogenes E. coli	E. coli	None	Marked
4. E.N.	80357	76	M	Chronic cystitis Urethral strictures	" "	E. coli A. aerogenes	E. coli A. aerogenes	None	Marked
5. J.O.	049271	59	M	Hydronephrosis Chronic bilateral pyelonephritis and cystitis	" "	Pseudomonas Paracolon	Pseudomonas Paracolon		
6. J.P.	125187	55	M	Urethral strictures	" "	Proteus morgani	Negative	None	Moderate, Cure
7. G.S.	139610	47	F	Neurogenic bladder	" "	Proteus sp.	Proteus sp. E. coli	None	Mild
8. R.S.	154404	56	M	Cystitis, urethral strictures	" "	E. coli A. aerogenes	E. coli	None	Mild
9. G.S.	A23420	30	M	Chronic pyelonephritis, cystitis	" "	E. coli A. aerogenes	E. coli	None	Marked
10. R.T.	62941	71	M	Urethral strictures	" "	alpha Strep-tococcus	E. coli A. aerogenes	None	Marked
11. W.W.	126870	60	M	Urethral strictures	" "	M. albus	Negative	None	Marked, Cure
12. L.S.	026844	70	M	Postop. TUR Cystitis	" "	P. aeruginosa	P. aeruginosa	None	Marked
13. G.J.	153845	70	M	Urethral strictures	" "	E. coli A. aerogenes	E. coli A. aerogenes	None	Marked
14. W.H.	153803	46	M	Horse shoe kidney with cystitis	" "	E. coli	E. coli	None	Marked



TABLE I (Cont.)

Name	Unit Number	Age	Sex	Diagnosis	Treatment	Culture		Toxicity	Improvement
						Before Treatment	After Treatment		
15. J.K.	15381	69	M	Acute pyelo-nephritis	TAO, 250mg. every 6 hrs. for 12 days	A. aerogenes	Negative	None	Marked, Cure
16. D.M.	A67916	63	M	Postop. TUR with cystitis	" "	P. aeruginosa	P. aeruginosa	None	Moderate
17. C.M.	A42595	72	M	Bilateral stag-horn calculi	" "	Alpha strepto-coccus, M. albus	Negative	None	Marked, Cure
18. W.W.	149583	30	M	Urethral strictures	" "	E. coli A. aerogenes	E. coli A. aerogenes	None	Marked
19. H.S.	155271	66	M	Acute pyelone-phritis, benign prostatic hyper-trophy	" "	E. coli A. aerogenes	E. coli A. aerogenes	None	Marked
20. G.S.	125423	65	M	Postop. TUR with cystitis	" "	E. coli	E. coli	None	Moderate
21. L.K.	A23103	69	M	Acute pyelo-nephritis	" "	E. coli A. aerogenes	E. coli A. aerogenes	None	Mild
22. A.B.	071783	50	F	Hemorrhagic cystitis	" "	A. aerogenes	Negative	None	Marked, Cure
23. I.C.	156264	70	M	Benign prostatic hypertrophy with urinary retention	" "	E. coli A. aerogenes	E. coli A. aerogenes	None	Marked
24. H.E.	108938	72	M	Carcinoma penis chronic cystitis	" "	P. aeruginosa	P. aeruginosa	None	Mild
25. G.F.	155722	68	M	Benign Prostatic hypertrophy with cystitis	" "	alpha strepto-coccus	Negative	None	Marked, cure
26. G.A.	107138	75	M	Chronic cystitis	" "	E. coli A. aerogenes	E. coli A. aerogenes	None	Marked

TABLE I (Cont.)

Unit		Name	Age	Sex	Diagnosis	Treatment	Culture		Toxicity	Improvement
Number	After Treatment						Before Treatment	After Treatment		
27.	N.S.	154415	55	F	Alkaline encrusted cystitis	TAO, 250mg. every 6 hrs. for 12 days	P. aeruginosa	E. coli A. aerogenes	None	Marked
28.	C.N.	157249	64	M	Benign prostatic hypertrophy with cystitis	" "	E. coli A. aerogenes	E. coli A. aerogenes	None	Marked
29.	R.B.	A32469	55	M	Periurethral abscess	" "	Proteus morgani	E. coli A. aerogenes	Mild nausea	Moderate
30.	E.R.	A64136	34	M	Urethral stricture	" "	E. coli	E. coli	None	Marked
31.	E.K.	026056	67	M	Urethral stricture	" "	M. albus	Negative	Mild nausea	Marked
32.	J.K.	A01635	51	M	Urethral stricture with perineal fistulae	" "	E. coli	E. coli	None	Mild
33.	R.H.	93521	74	M	Urethral stricture	" "	P. aeruginosa	P. aeruginosa	None	Moderate
34.	M.N.	95316	78	F	Chronic cystitis	" "	E. coli	E. coli	None	Mild
35.	R.M.	A33905	75	M	Benign prostatic hypertrophy with urethral stricture	" "	Proteus vulgaris	Proteus vulgaris	None	Moderate
36.	E.H.	A25358	47	F	Urethritis and cystitis	" "	E. coli	E. coli	None	Mild
37.	S.V.	156354	51	F	Chronic pyelonephritis	" "	E. coli	E. coli	None	Mild
38.	W.M.	157626	64	M	Urethral stricture with chronic cystitis	" "	Proteus sp.	Proteus sp.	None	Mild
39.	A.S.	156001	16	M	Pyelonephritis and cystitis	" "	E. coli	E. coli	None	Moderate
40.	R.B.	156288	68	M	Benign prostatic hypertrophy with cystitis	" "	P. aeruginosa	P. aeruginosa	None	Marked

The author wishes to express his thanks to J. B. Roerig and Company for their generous supply of triacetyloleandomycin.

The technical assistance of the residents of the Urology Department of the University of Arkansas School of Medicine is gratefully acknowledged.



TABLE II

Effect of Triacetyloleandomycin Treatment on  
Urinary Cultures in Forty Patients With Urinary Infections

	M. Albus	A. Strep- tococcus	E. Coli	A. Aero- genes	P. Aeru- ginosa	Para- colon Bacillus	P. Morgani	Pro- teus Sp.	Pro- teus Vulgaris
Positive Before Treatment	3	2	21	13	7	1	2	2	1
Positive After Treatment	0	0	25	11	6	1	1	2	1

In three patients the urine cultures were negative for *E. coli* before treatment and became positive following medication; in three patients the urine cultures were negative for *A. aerogenes* before treatment and became positive following medication.

# Hypnotherapy in Obstetrics and Gynecology

WILLIAM S. KROGER, M.D.\*

My discussion will be directed to the psychosomatic aspects of obstetrics and gynecology. But, first, may I define the term "psychosomatic." Properly, it refers to the interaction and interdependence of emotions and bodily functions in the production of symptoms. It does *not* mean psychologic or psychogenic as commonly implied.

There are many indications for the use of hypnotherapy in psychosomatic obstetrics and gynecology. It can be very valuable for reducing the fear and tension of the parturient, and decreases the need for analgesia and anesthesia during labor. In nausea and vomiting and hyperemesis gravidarum, hypnosis is practically a specific. I reviewed the literature back to 1900, and I found that several hundred drugs and procedures had been advocated for the treatment of nausea and vomiting. None of these are employed today. Nearly all of the more recent medications that have been assayed by blind placebo tests indicate that they are valueless, thus pointing out a psychogenic etiology and profound suggestive effect.

The appetite can be controlled by post-hypnotic suggestions to eat less. The so-called "eating for two" syndrome or the excessive weight gain during pregnancy can be readily curbed by these suggestions. Hypnosis can also reduce the stress factors associated with pre-eclampsia and hypertensive renal disease, both concluded to be diseases of adaptation.

Heartburn and salivation also respond remarkably to hypnotherapeutic techniques. With reference to lactation, every obstetrician is well aware that a full breast does not necessarily lactate. Women who apparently have an ample milk supply often cannot nurse their babies. This is not surprising, since the anterior pituitary, which is under direct control of the higher brain centers, liberates the lactogenic hormone responsible for milk production. If inhibition of this hormone occurs as a result of emotional processes,

lactation will not ensue. Hypnosis can stimulate the desire and willingness to nurse.

In gynecology, hypnosis, when combined with psycho-dynamic techniques, is a valuable method for treating frigidity. This symptom is so common in our culture that we have dubbed it "the emotional plague." Dyspareunia due to vaginismus is a form of frigidity due to spasm of the vaginal muscles which yields readily to hypnosis. This entity is not uncommon and some women go through their entire married life without having had intercourse because of this constrictive spasm. This refractory condition can respond to hypnotherapy directed to eliciting the deep-rooted causes; that is, find out why this particular symptom is used as a defense and what significance it has in the patient's emotional household. Hypnotherapy is valuable, likewise, in all the functional menstrual disorders as amenorrhea, pseudocyesis, dysmenorrhea, hypermenorrhea, premenstrual tension and menstrual migraine headaches. Pseudocyesis, or false pregnancy, is a most interesting condition which illustrates the intimate connection between the psyche and reproductive tract. Here a woman imagines that she is pregnant.

Actually, on the basis of a strong conscious or unconscious desire for pregnancy, her autonomic nervous system is conditioned to manifesting the signs and symptoms of pregnancy; the cervix softens, the breasts enlarge, colostrum may be secreted, and the abdomen often swells. Some women even go into "labor" and many obstetricians have awaited the "baby."

Functional low back and pelvic pain can also respond to hypnosis. It may be used as a means of differential diagnosis to establish whether or not the pain is psychogenic in origin. Likewise in psychogenic pruritus vulvae, hypnotic suggestion often affords symptomatic relief and this motivates the patient to continue treatment.

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In the menopause, the vasomotor symptoms or the hot flashes are often due to psychological factors. There are a spate of articles emphasizing that the annoying symptoms of the so-called change of life are due to our highly neuroticized culture. The hot flashes often will respond to phenobarbital and reassurance and they certainly can be alleviated by post-hypnotic suggestions. There is no correlation between the amount of available blood estrogens and the severity of hot flashes. Those women who have the worst hot flashes may have an adequate hormone level as evidenced by cornification of the vaginal smears. Those with absence of cornification often have *no* vasomotor symptoms. Most women will secrete small amounts of estrogens long after the climacteric. As a matter of fact, even after the ovaries atrophy, the adrenal glands continue to produce estrogens and androgens.

I have used hypnosis for all types of minor surgery as dilatation and curettage, for biopsy of cervix and also for culdoscopy. Recently Dr. DeLee and I performed a Cesarian-hysterectomy under hypnosis *without any type of analgesia or anesthesia*. We have also done other major surgery under hypnoanesthesia.

Several investigators have demonstrated that in infertility the tubes are in a continual state of spasm in nervous and tense individuals. Following posthypnotic suggestions, the tubes often relax and the sperms then have a good chance of fertilizing the ovum. Hence, "blocked" tubes often may be potent and one should make a thorough investigation before informing an infertile patient that she cannot become pregnant.

Hypnosis can be used to relieve the intractable pain in advanced carcinoma. A small series of patients who were on large doses of opiates and who were going to have lobotomies, cordotomies and posterior rhizotomies performed for relief of the pain, were hypnotized and were maintained without sedation or opiates until they died.

There are many other miscellaneous uses of hypnosis. If you wish to examine an obese or tense patient whose uterus is

difficult to feel, she may be hypnotized prior to the examination and her abdomen will relax just as it would under anesthesia. Hypnosis can also be used to relax the tubes during hysterosalpinography.

Some of the advantages of hypnosis for labor and delivery are: It reduces fear and tension, thereby raising the pain threshold. We do not use the words "pain" or "labor pains" in our delivery rooms. I simply ask, "How are your contractions?" I believe that if one says, "How are your pains?" to a patient, it implies that she must necessarily have pains.

Several studies indicate that hypnosis will reduce the length of the first stage in primiparae and multiparae. Also, it reduces maternal exhaustion, thus enhancing the ability of the parturient to withstand stress and toxemia. Hypnosis also reduces the need for analgesia and chemoanesthesia. Furthermore, hypnotic anesthesia can be readily controlled. This is not so in spinal, caudal, or intravenous medication. Once an anesthetic invades the body, it is beyond control.

The hypnotic state can be flexible; the patient can be put into it or taken out as she wishes. Furthermore, the rapport is readily transferred to an intern, nurse or husband. With more trained hospital personnel, these patients will be able to achieve even more benefits. With hypnosis there is also increased cooperation during labor and delivery. It has no adverse effect on the progress of labor, nor is there inhibition of the uterine contractions. No elaborate education is needed in the birth process, as in "Natural Childbirth" and other ritualistic types of procedures that have been recently advocated. After all, the dentist using hypnoanesthesia does not educate a patient on cavity preparation. He merely relaxes the patient via a hypnotic technique.

One of the most distressing problems in obstetrics is fetal anoxia. This is responsible to some degree for cerebral palsy, epilepsy, mental retardation and other brain diseases. Recent investigations indicate that the oxygenation of the fetus in utero is analogous to an adult stand-

ing on the top of Mt. Everest. Oxygen deprivation causes death of brain cells and excessive sedation is responsible for a high percentage of fetal anoxia and even death.

There is no possibility that hypnosis will harm mother or baby. As Pierre Janet stated, "The only danger in hypnosis is that it is not dangerous enough." The only danger, I might add, that I have encountered is to myself, namely, the ridicule and the hostility that one incurs as a hypnotist.

Some of the disadvantages of hypnosis in obstetrics are the added time needed for prenatal conditioning — one has to spend anywhere from five minutes to a half hour at the initial sessions. Of course, after you have once hypnotized a patient, then she will enter into the hypnotic state readily within a matter of seconds. She may be placed in another room while you are seeing other patients. You *do* have to be at the hospital with the patient; however, your presence is equivalent to a half grain of morphine and will be extremely conducive to relaxation.

Unfortunately, not all patients can be hypnotized deeply enough for surgical anesthesia. Also, the responses to the various types of hypnosis are affected by psychosocial factors. Many times I have prepared a patient carefully and thought that she would go through labor without the need for an anesthetic only to find that she had been disillusioned by a skeptical friend or neighbor. This tends to counteract all the good work that has been done. Sometimes I am forced to bring a patient who has been carefully prepared into a labor room where women in various stages of labor are evidencing great pain. This, too, may offset much of your careful preparations. I believe that our present hospital set-up is barbaric. I believe that all women are entitled to a private labor room. I also feel that the short extra time that we devote to these patients is valuable because there is no price too high to pay for healthier, happier babies and mothers.

One disadvantage of hypnosis that I'd like to emphasize is that it must not be used in severely disturbed patients. This

does not mean that you cannot treat a psychotic with hypnotic techniques. It does mean that you must know how to deal with unconscious material before using hypnosis on such patients. You must have a good knowledge of psychiatric techniques. This admonition applies to all phases of medicine and dentistry because if a psychotic comes into your office, you must be very careful, even if you are using non-hypnotic techniques. In these cases it is possible to be blamed no matter what you do.

During the last twenty-five years the author has delivered several hundred patients by hypnoanesthesia. Hypnosis was utilized as the sole analgesic and anesthetic agent for labor, delivery, and where performed, repair of the episiotomy in about 25% of the cases. Roughly, 50% more were delivered with minimal amounts of analgesia and anesthesia. Even though the remaining 25% required the regular amount of analgesia and anesthesia, nearly all considered their experiences very worthwhile. Our patients are carefully screened for hypnoanesthesia in order to eliminate the individuals who ardently wish to overcome deep-seated feelings of inadequacy by what they consider a self-glorifying experience. Many neurotic individuals need this type of ego-aggrandizement. In these, failure to go through the entire labor and delivery by hypnosis is apt to produce severe depressive reactions. This is not an indictment of hypnosis, but an error in recognizing a deep-seated personality disorder.

All patients are informed that analgesia and anesthesia are available and if needed, they are not to feel guilty in asking for assistance. They are also informed that they do not have to please me nor will I feel that they have let me down. Recently, I have been working with groups and because of the "emotional contagion" that occurs in group therapy, patients are more highly motivated and, as a result, deeper states of hypnoanesthesia are obtained. This is also a tremendous time saver. Many hospital hours are also saved as labor is shortened by about three hours in primiparae and two hours in multiparae.



The following five brief case reports illustrate how hypnoanesthesia *per se* can be employed for minor or major surgery. All patients were prepared by a rehearsal of the intended surgery. The first two cases necessitated only two visits, and the last two cases eight visits respectively. The entire surgical procedure was described in detail while the patients were in a hypnotic state. Such preliminary training during hypnosis prevents surprise, fear and shock, and thus raises the pain threshold. This "experiencing" undoubtedly counts for the marked difference in pain perception between primipara and multipara. Conditioning in the hypnotic state to what is going to happen undoubtedly "sets" the neuropsychobiologic pathways, and later as the result of "synaptic ablation" in the cord, pain impulses do not reach the receptors in the higher centers.

#### CASE I

A 24-year old female had a fairly large benign tumor removed from her right breast at the Edgewater Hospital. This patient exhibited no sign of pain or discomfort at any time. The surgeon, Dr. J. Silverstein, stated that the relaxation of the tissues was pronounced and that he readily could have performed a radical mastectomy if necessary. The patient was fully aware of the entire procedure.

#### CASE II

An 18-year old female had an excision biopsy of the left breast, performed at St. Vincents Hospital.\* The surgeon, Dr. William Mitty, also noted the relaxed tissues, decrease in bleeding and complete absence of pain or discomfort. He also believed that she would have easily tolerated extensive surgery. This patient had a complete amnesia for the entire experience.

#### CASE III

A 28-year old para III, gr. II, had an elective Cesarean-hysterectomy performed at the Chicago Lying-In Hospital by Dr. S. T. De Lee *without* analgesia or anesthesia. This is believed to be the first such case on record. The patient experienced

no subjective discomfort and conversed with everybody in the operating room. She was fully conscious and was able to watch the birth of her baby. There was no discomfort when the baby was delivered by forceps, or when the uterus was extirpated. The patient made an uneventful recovery.

#### CASE IV

A 27-year old female had a subtotal thyroidectomy, performed at the Edgewater Hospital by Dr. Philip Kaplan solely under hypnoanesthesia. No sedation or preoperative analgesia or anesthesia was used at any time. The patient was conscious for the entire experience and when brought out of surgery, was able to sit up immediately and felt, as she stated, "good enough to walk to my own room."

In the last two patients, not a single bleeder had to be clamped in the skin due to the local ischemia, induced by the vasospasm usually associated with deep hypnosis. There was *no sign of neurogenic shock* at any time in either case. It is to be re-emphasized that these patients were somnambules — they were able to enter the deepest state of hypnosis. They constitute about 10% of the population. However, most people can be hypnotized to some degree and for these, hypnosis can potentiate chemoanesthesia.

In conclusion, because of the need for a close interpersonal relationship between patient and anesthesiologist, anesthesiology must of necessity take up its abode in psychiatry. Both specialties have one thing in common — production of psychic change to alter the conscious perception of/and memory for pain. Reassurance and support, the mainstays of psychotherapy for an acute psychologic crisis, are important in preparing an anxious patient for anesthesia. Since time is an important factor, such psychotherapy can be achieved rapidly by hypnosis.

Finally, hypnosis is not a panacea nor will it ever be a substitute for chemical anesthesia. Even though it has been around for a long time, hypnosis is still a young science, and, contrary to popular opinion, it is not a spectacular phenomenon, but is experienced in one form or another as a part of everyday life. Today,

\*This patient was used to demonstrate hypnoanesthesia at closed telecase at the 10th Postgraduate Assembly of the New York State Society of Anesthesiologists, Dec. 6, 1956.

hypnosis is becoming an accepted medical tool — initially more time consuming than an injection, but just as practical. Therefore, physicians who will use hypnosis judiciously are going to find new functions for this technique and to many of them I am certain that it will help bring insight into the numerous psycho-

logic factors associated with the practice of surgery and obstetrics. Thus, physicians will do well to direct their attention toward the subtle and reciprocal action of mind and body — that is, personality. Good physicians, of course, will always remember that the organs still belong to human beings—to personalities.





# ◆ *What's* NEW ◆

## General Practice

H. W. THOMAS, M.D.\*

Unlike the legendary screechbird, which flies backwards because he isn't concerned about where he's going but with where he has been, we in the Medical Profession must concern ourselves with both the past and the future. When we pause to consider present trends in General Practice, we must, of necessity, recall the direction which the practice of Medicine in general has followed during the past two generations.

Sir Luke Fildes' painting "The Doctor," painted in 1891 depicts the Family Doctor, or General Practitioner, at perhaps the height of public esteem. In the years that followed, however, this country witnessed explosive growth, exciting technological advances, and amazing scientific and medical progress. Americans clamored for shinier automobiles, more horsepower, finer homes, and "the best of everything," including medical care. It became fashionable to seek all, or nearly all, of the family medical care from first one "specialist" then another. The Family Doctor was relegated to the role of a first aid man dispensing pills, sometimes from his coat pocket, for headaches and minor illnesses and making night calls and doing home deliveries for those unable to "keep up with the Joneses" in the trek to the "specialist."

Surprisingly, it was the G. P. himself who was, in part at least, responsible for the low ebb to which his medical domain receded. All too often he lacked either the ambition, the inclination or the opportunity to keep abreast of the rapid strides which medicine was making. In other instances, he jumped on the bandwagon and became a self-appointed "specialist." The results of the trend were

soon manifest in a concentration of physicians in the larger centers of population and a shortage of doctors in the smaller communities. Admittedly, this picture is somewhat overdrawn, but it does represent the trend prevailing in Medicine a few years ago.

The truly dedicated and competent men in the various specialties were among the first to recognize the threat to the high standards of medical care which this country was attaining. They met this situation, at least insofar as it concerned the various specialties, by organizing the various examining and certifying boards, with the result that those practitioners who proposed to practice as "specialists" were required to demonstrate proper qualifications to do so.

Those of us in the field of General Practice, however, were not quite so quick to grasp the significance of the rapid changes occurring in the field of medicine and the attitude became rather prevalent both in the profession and among the lay public that a doctor became a General Practitioner only when he couldn't do any better, either because of financial inability to avail himself of residency training or because he wasn't energetic or intelligent enough to do so. Even among our medical schools and hospitals all over the nation our training programs were oriented on training graduates for the various specialties and the young doctor desiring adequate training to enter General Practice was forced to get it on the fringes of the specialty training programs, with no definite planned program of training available for him. Unfortunately these attitudes and conditions still prevail in some areas today.

\*Dermott, Arkansas.

However, within the past decade there has been a dramatic change in concept of the G. P., his role in the practice of medicine, facilities for his adequate training, and provisions of opportunities for him to conduct his practice in modern hospitals.

True, this was in part brought about by public demand for services and the threat that if these services were not provided by the medical profession then they would be obtained through governmental agencies, cults such as Osteopathy, or otherwise. But in the main these changes were initiated by the very group which should have done so — the General Practitioners themselves.

The almost unbelievable advances of medicine in recent years have made it possible for G. P.'s to provide countless services that formerly were available only in "Specialty Centers," and at the same time our various specialists have pushed back the frontiers of medicine to include even more and complete services such as vascular surgery, neurosurgery, electroencephalography and myriads of other diagnostic and therapeutic services.

For a time the opinion was held, and unfortunately is still held in some areas, that medicine had gotten too complicated for anyone to do a creditable job of General Practice.

The President-elect of the American Academy of General Practice recently pointed out the frequently overlooked fact that quite the contrary is true. Actually the practice of medicine is, in many respects, simpler and easier than a few short years ago. Whereas in 1927, a standard textbook on General Medicine contained 75 pages on the subject of Tuberculosis, the same textbook now more thoroughly deals with the subject in only 49 pages. The same is true for many other topics.

With the formation of the American Academy of General Practice some ten

years ago and the adoption of standards of continuing postgraduate education for the General Practitioner there has been a resurgence of enthusiasm for General Practice throughout our country. There has been a rekindling of self-esteem on the part of the G. P. and an increased public esteem for the medical profession as a whole. Medical education is being reshaped to include a proper balance between the specialty training program and the training of graduates for General Practice, with the realization that both programs are absolutely essential if we are to adequately provide for the public health.

We in Arkansas are particularly fortunate in this respect. The people of Arkansas through their legislators have provided a Medical Center which is a credit to this nation, and both our legislators and medical educators can take pardonable pride in their achievements when men come from other states and other nations to inspect and take inspiration from our Medical Center. They have wrought well!

The training program of our own Medical Center has undergone and is undergoing changes. More emphasis is being placed on the mission of training graduates for General Practice in Arkansas and at the same time, as a necessary and vital part of such training, continuing an outstanding Specialty training program. To be sure, this program of General Practice training is not yet completely adequate, but the trend is most heartening. The G. P. of today is providing more complete and better medical care than ever before, and in cooperation with his colleagues in the various specialties and in the field of medical education he will continue to do it.

In answer to the query "What's New in General Practice?" the answer is the resurgent, revitalized, and rededicated G. P. himself.



**A TEACHING SEMINAR**  
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## A Study of the Factors of Urinary Stasis In Pregnancy

M. M. CHURCH, M.S.\*\*

### INTRODUCTION

It was in 1761 that the anatomist, Morgagni, first recorded the occurrence of dilatation of the renal pelvis and upper ureters during pregnancy. Alburran, Bumm, and Rovsing in 1889 showed the clinical importance of infection superimposed upon urinary stasis as the essential feature in pyelitis of pregnancy.

Many theories have been advanced to explain the etiology of the hydronephrosis, some mechanical — some physiological or hormonal — and others toxic. Up until a few years ago the most widely accepted theory for the cause of hydronephrosis and hydroureter of pregnancy was the mechanical obstruction of the ureters by the enlarging uterus.

Clinical and anatomical observations have delineated most of the changes which occur in the urinary tract during pregnancy. There is a dilatation of the renal pelvis and calyces. Histologic studies of these kidneys reveal an increased vascularity of the cortex and a thinning of the pelvis with its muscle bundles widely separated by hyperplastic connective tissue. The ureters are dilated and tortuous, especially through the abdominal portion.

In 1928, Hofbauer<sup>3</sup> made detailed studies of the lower ureter. He has shown that there is hypertrophy and hyperplasia of the muscle and connective tissue respectively, particularly in the juxta-

vesicle portion of the ureter where it passes through the parametrium and into the bladder. The lower end of the ureter is ensheathed by a longitudinal muscle layer, the sheath of Waldeyer, which also undergoes hyperplastic development without any evidence of inflammatory change, and results in an obstructive phenomenon due to the narrowing of the lumen of the ureteral tube.

Trout and McLane<sup>8,9</sup> demonstrated that ureteral motility decreased in frequency and amplitude during pregnancy. As pregnancy advances, there is a progressive decrease in ureteral tone with consequent dilatation. These workers showed that the atonic condition is first manifested around the third month of gestation. In a series of 98 cases, Kretschmer, Heaney, and Ockuly<sup>6</sup> reported evidence of dilatation between the second and fifth month in 67 per cent of cases and by the ninth month in 93 per cent of cases.

In most instances the kidney and lumbar ureters are displaced laterally in late pregnancy. Thus displacement, hypertrophy, and atony take place bilaterally and in the majority of cases the hydronephrosis is bilateral. In the minority of instances, this phenomenon occurs unilaterally and then predominately on the right side. The explanation for this is the dextra-rotation which the uterus under-

\*NOTE: The Department of Obstetrics and Gynecology utilizes research in its teaching effort, as each senior student pursues a research topic. This seminar paper (abstracted for publication) is an example of the combination of teaching and research. This project, devised and accomplished by a senior student is presented here both because it reflects a methodology of teaching and learning and because it is clinically informative.

—Willis E. Brown, M.D.  
Head of Department of Obstetrics

\*\*Senior Medical Student, Class 1958.

goes during the normal progress of pregnancy and the cushioning effect on the left ureter by the sigmoid colon. These changes tend to occur more frequently in the multigravida. Conversely, they are more severe in the primigravida, unless there is or has been some underlying urinary tract infection present.

Following partuition, involution of these hyperplastic, hypertrophic and atonic changes begins almost immediately unless infection is present. Involution of these upper urinary tract changes is usually complete within two to three weeks postpartum. Kretschmer's<sup>5</sup> statistics show 59.4 per cent returning to normal in two weeks and 94 per cent by six weeks. Infection in any part of the urinary tract frequently delays and in some instances permanently prevents this regression to normalcy.

Many observations cast doubt on the mechanical theory of hydronephrosis. The infrequency of this clinical state in association with large abdominal-pelvic tumors lead to further investigations of the etiology of hydronephrosis. Hofbauer's microscopic changes in the ureters and the demonstrable evidence of ureteral atony cannot be ignored in considering the etiology of hydronephrosis.

Jenkins and Van Wagenen demonstrated that ureteral dilatation persisted after removal of the fetus from Rhesus monkeys while leaving the placenta intact until term. Clinical evidence of hydronephrosis are seen in cases of ectopic pregnancies where no pelvic mass exists to produce mechanical obstruction, and the same conditions have been observed in a few cases of chorion epithelioma in males.

It seemed feasible to propose that since the urinary system and genital system arise from the same embryological anlage that they might be affected by the same hormonal stimulants.

Hundley, Diehl, and Diggs<sup>4</sup> studied the effects of hormone administration on ureteral motility. They found that estrogen tends to increase and progesterone to decrease ureteral motility, producing an atonic state. Therefore, if estrogen could produce the hypertrophy and hyperplasia of the terminal ureter as seen micro-

scopically, and if progesterone which has an alloying effect on uterine contractions during pregnancy produced a similar effect on the tone and peristalsis of the ureter, it appeared possible that these hormonal effects could produce the clinical and anatomical picture of hydronephrosis without the co-existence of the tumor of pregnancy.

From a review of the literature it seems feasible to propose, therefore, that hydronephrosis and hydroureter of pregnancy could be caused by two factors:

1. Hormonal effects on the ureter and kidney resulting in muscular hypertrophy, connective tissue hyperplasia, muscular atony, oedema, and increased vascularity. These tissue changes resemble the decidual changes seen elsewhere during pregnancy and alone could be capable of producing these observed obstructive and atonic changes.

2. Mechanical obstruction and displacement of the urinary organs tend to further urinary obstruction and dilatation. It appears probable that the mechanical factors would be ineffectual without concomitant hormonal influences.

To explore this hypothesis an experiment was designed to show whether or not the production of a pseudo-pregnancy by the administration of estrogen and progesterone alone can produce a hydronephrosis and hydroureters similar to that seen in pregnancy.

#### PROCEDURE

After careful study, three white females in post-menopausal age group were selected for study. Estrogens\* (estrone sulfate, estradiole trimethyl acetate, diethyl stilbesterol) and a combination of Estrogen and Progesterone\* (poluton and delalutin), were administered at appropriate intervals over a 6 months period.

The biologic response of the patient was determined by serial endometrial biopsies and the dosage increased until a pseudo-decidua was obtained. (See Table). I.V. pyelograms were obtained before, during, and after the experimental interval.

\*Materials kindly furnished by Scherring, Squibb, Lakeside.



#### DATA

The first endometrial biopsy on all subjects showed an atrophic senile type of endometrium. Consecutive endometrial biopsies at frequent intervals revealed transitory endometrial phases consistent with the usual menstrual cycle progressing through the proliferative secretory and pre-decidual phase. The pseudo-decidual appeared between 73 and 109 days after hormonal administration to these three women.

The pre-treatment pyelograms showed adequate bilateral renal excretion and no evidence of infection, ureteral dilatation, or hydronephrosis. The consecutive intravenous pyelograms showed a progressive but minimal hydronephrosis and hydroureters which, while never reaching the pathologic degree seen in normal pregnancy, were easily observable in comparison to the initial pyelograms. These changes were in the nature of moderate irregular dilatations of the upper ureters and pelvices, and a minimal blunting of the calyces. The first minimal observable changes were demonstrated as early as 73 days in one subject and as late as 110 days after the onset of estrogen and progesterone administration. Two of the women responded much more significantly than the third. The maximum responses were observed between 108 days and 144 days after initial hormone administration. (See Table).

Both by palpation and radiologic evidence the uterus was seen to increase in size and exert pressure on the dome of the urinary bladder.

All of the subjects remained afebrile and showed no evidence of a superimposed urinary tract infection during the testing period.

Four months after the experiment was begun, one patient began to get swelling in her extremities. Although she became edematous from her hips downward within the next two weeks, she remained afebrile and no significant temperature changes in her extremities were noted. The etiology for these edematous responses could not be definitely determined, but a diagnosis of venous insufficiency secondary to venous atony and dilatation

from the progesterone effect was suspected.

Five and one half months after parenteral progesterone and oral estrogen these hormones were withdrawn and the experiment discontinued.

Within three to four days after discontinuing hormone administration, all of the subjects began having withdrawal vaginal bleeding. By eleven days subsequent to the experiment's termination, the process of decidual shielding was completed in all cases.

#### DISCUSSION

These experiments failed to establish conclusively that exogenous estrogen and progesterone alone would produce the hydroureter or hydronephrosis to the degree seen in pregnancy. However, the demonstrable changes in the ureters and kidney pelvices of the subjects of this investigation suggest that hormonal influence are important. Further the results obtained were highly suggestive of the effects of these two hormones during pregnancy on two organ systems.

While the changes affected in the kidneys and ureters in these three women were not extensive enough to warrant the radiographic diagnosis of hydronephrosis or hydroureters, nevertheless, the dilatation of the upper ureters, pelvices and calyces was marked enough to indicate an unmistakable causal relationship which was not due to infectious or mechanical factors.

The remaining question then is no longer whether these substances *can* produce dilatatory changes of the urinary tract seen in pregnancy, but can they to the degree seen clinically? Are these hormonal agents alone capable of producing this phenomenon to the severity of which we know this condition to exist in pregnancy? It appears possible that the hormones alone are capable of producing these changes, although this experiment has not exhibited this fact. Had the subjects been younger, premenopausal and in the child-bearing age group, whose tissues were still under the constant effects of these normal physiologic secretions, perhaps these same tissues would have re-

sponded more dramatically than those seen in this experiment. It is further noted that these physiologic pregnancy responses of the urinary tract do not become marked until after the third to fourth month of pregnancy. Had the administration of these hormones been prolonged, the kidneys and ureters might subsequently have responded to a degree more closely simulating this condition in pregnancy.

And lastly, the empirical dosage employed, which while adequate for a pseudo-decidual response in the endometrium, may not have been adequate to affect the urinary tract.

In the past the explanation for varicosities and dependent edema seen in pregnancy was the mechanical pressure of the enlarging uterus upon the venous and lymphatic channels passing through the pelvis. More recently the increased progesterone concentration has been postulated as a cause of atony and dilatation of the venous lymphatic channels resulting in vascular stasis and the diffusion of fluid into the extra-vascular spaces. The edematous condition which arose in two of these three women may be attributed to such a progesterone effect.

#### SUMMARY AND CONCLUSION

These studies have suggested but not proved that estrogen and progesterone

alone can produce the hydronephrosis and hydroureters similar to that seen in pregnancy. These studies further indicate that these hormones may be of importance in the etiology of varicosities and venous stasis seen in pregnancy.

The role of mechanical pressure has not been evaluated, but may be the additional factor which leads to the exaggerated changes seen in term pregnancy.

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MONTH	Pre-Medication		1	2	3	4	5	6
Subject								
ESTROGEN	I.	0	10 mg. QD	20 mg. QD	30 mg. QD	75 mg. QD	100 mg. QD	Discontinue
	II.	0	10 mg. QD	20 mg. QD	30 mg. QD	75 mg. QD	100 mg. QD	Discontinue
	III.	0	0	0	20 mg. QD	75 mg. QD	100 mg. QD	Discontinue
PROGESTERONE	I.	0	0	15 mg. QD	30 mg. QD	65 mg. QD	65 mg. QD	Discontinue
	II.	0	0	15 mg. QD	30 mg. QD	65 mg. QD	65 mg. QD	Discontinue
	III.	0	15 mg. QD	15 mg. QD	50 mg. QD	65 mg. QD	65 mg. QD	Discontinue
ENDOMETRIAL BIOPSY	I.	Senile Endometrium	Proliferative	Secretory	Pseudo- Decidual	Pseudo- Decidual	Pseudo- Decidual	Discontinue
	II.	Senile Endometrium	Proliferative	Secretory	Secretory	Pseudo- Decidual	Pseudo- Decidual	Discontinue
	III.	Senile Endometrium	Senile Endometrium	Senile Endometrium	Secretory	Secretory	Pseudo- Decidual	Discontinue
I.V.P.	I.	Normal	Normal	Normal	Dilatation of ureters & calyces	Cont. uri- nary tract changes	Cont. urinary tract changes	Discontinue
	II.	Normal	Normal	Normal	Normal	Normal	Dilatation of ureters and calyces	Discontinue
	III.	Normal	Normal	Normal	Normal	Normal	Dilatation of ureters and calyces	Discontinue
PHYSIOLOGIC CHANGES	I.	None	None	None	None	None	Swelling of extremities	Discontinue
	II.	None	None	None	None	None	None	Discontinue
	III.	None	None	None	None	None	Swelling of upper extremities	Discontinue

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# What Is Your Diagnosis?



FOR ANSWER SEE PAGE 470

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## Resolution of Appreciation and Respect

of the  
Arkansas Tuberculosis Association  
in Memory of  
DR. FRED JAMES GRAY, JR.

The Executive Board of the Arkansas Tuberculosis Association, in Annual Business Meeting in Little Rock on September 26, 1958, unanimously adopted the following Resolution:

WHEREAS, At the Divine reckoning since last we met, one of our number, Dr. Fred James Gray, Jr., has been removed from the stage of life on which he played so eminent a role, and that somewhere in the hidden plans of the universe it must be marked that his work was done and that he had earned eternal peace, untimely though his passing may seem to us, and;

WHEREAS, There is grief in the hearts of those of us who felt the impact of his personal kindness and benevolence as well as his unfaltering professional service to the many people beyond the scope of those whom he actually knew and served through the qualities and virtues implicit in the title Doctor and Gentleman, and;

WHEREAS, Doctor Gray possessed these qualities of refinement and lofty ideals, an infinite breadth of interest and sympathy which included activities of the church and children in addition to the

many responsibilities contingent upon his life's work as a physician and surgeon. His philosophy of life was admirable, an unique asset to his personal character and to his profession. It was this philosophy which enabled him to move forward with undiminished fortitude and courage in the face of known adversity that would have halted a less resolute and dedicated man. Assuredly, no man, in the short span of time allotted to Doctor Gray, gave more to the concern for and efforts in the control of tuberculosis than did he;

THEREFORE, BE IT RESOLVED, That it is with a sense of the immeasurable void created by his passing and of the great service he has rendered the Medical Profession and this Organization that we express in this way the affection and esteem we held for Doctor Gray, and;

BE IT FURTHER RESOLVED, That a copy of this Resolution be sent to the members of his bereaved family, a copy be furnished the Arkansas Medical Society, and that an additional copy be filed with the minutes of this meeting.

Harley C. Darnall, M.D.  
Richard V. Ebert, M.D.  
W. E. Morris, M.D.



# Arkansas Public Health at a Glance\*

## ROCKY MOUNTAIN SPOTTED FEVER 1937-58



STATE BOARD OF HEALTH

### TOTAL - 91

In 1958, 11 cases of Rocky Mountain Spotted Fever were reported to the Communicable Disease Division of the Arkansas State Board of Health. Four of these cases were in one family. Since the establishment of the Communicable Disease Division in 1937, a total of 91 cases of Rocky Mountain Spotted Fever have been reported in Arkansas. The greatest number of cases reported in one year was 16 in 1950. Fourteen cases were reported in 1949; 8 cases in 1956; 6 cases in 1947. For each of the other 17 years of reporting, 0 to 4 cases per year were reported.

Because Rocky Mountain Spotted Fever is a disease of variable clinical severi-

ty, because it responds to broad spectrum antibiotics, and because the specific serologic diagnostic procedures require blood samples which are often not readily obtainable, it is probable that this diagnosis is often only suspected and not confirmed. These factors make under-reporting a definite problem. The reported cases should, however, reflect the relative incidence of the disease and the general geographic distribution.

Rocky Mountain Spotted Fever, a rickettsial disease transmitted by the bite of an infected tick occurs throughout most of the United States during spring and summer. The incubation period is about 3 to 10 days. Clinical symptoms can vary

\*Sponsored by Arkansas State Board of Health.

from a very mild measles-like course to a prostrating illness with severe CNS manifestations, coma and death. Typically there is a fluctuating fever for about two weeks, and a rash varying from macula papular to petechial that starts on the wrists and ankles about the third day and spreads to the rest of the body. Treatment with broad spectrum antibiotics is effective and modifies the typical course.

The diagnosis should be considered in cases of questionable rashes, and the history should be reviewed for exposure to ticks. If the clinical course is compatible with Rocky Mountain Spotted Fever, the diagnosis can be confirmed by complement fixation tests using specific Rickettsial antigen. This test usually becomes positive during the second week of illness. The complement fixation test requires acute and convalescent serums. Approximately 10 cc of clotted blood or 5 cc of serum should be sent to the Arkansas State Board of Health Laboratory.

One specimen should be drawn in the acute phase and then the convalescent specimen 2 to 4 weeks later. The Weil-Felix reaction also usually becomes positive about the same time, but this reaction is not specific for Rocky Mountain Spotted Fever, as is the complement fixation test.

Commercial vaccine against Rocky Mountain Spotted Fever is available. The vaccine is given in three injections 5 to 7 days apart. If vaccine is given, the course should be started in late winter or very early spring. Protection is not complete, and stimulating doses should be given annually if vaccination is indicated. Since chloromycetin, chlortetracycline, and oxytetracycline are effective therapeutic agents, vaccination is not generally recommended except for individuals working in highly exposed situations. Egg sensitive individuals may have severe reactions to the vaccine which is grown in the yolk sac of chick embryos.





# Editorial

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## The Third Man Theme

ALFRED KAHN, JR., M.D.

Who is your boss? Unfortunately, the practicing physician is less and less his own boss. What rights he has have in some measure been contested in recent years.

Only through the selfless expenditure of time by a group of very able physicians was Socialized Medicine averted. A united effort at the Grass Roots level helped start this fight, and frequent, vocal representations to Congress were probably responsible for its finale. The political climate of our times has changed somewhat and the fight for socializing the medical profession has changed from a frontal assault to a more Fabian-like war of attrition.

Our most recent problem is a fight against bureaucracy both governmental and private. It is more insidious and at least as dangerous as Socialized Medicine.

The haunting title song of a splendid post World War II motion picture well gives a capsule description of medicine's newest conflict. The system of free enterprise as adapted to the Medical Profession is being severely jeopardized by a third party negotiating with or between the patient and the physician of his choice.

The labor unions have opened hospitals in certain areas in which the staff is limited; the patient has no choice of his own physician. It is further our understanding that other physicians may not use these facilities. The physician is paid a salary. This, then, represents a "closed hospital" with physicians not permitted to do their own billing.

The insurance companies have been of inestimable help to the Medical Profession. They have helped stave off So-

cialized Medicine. Yet, here, too, there is need for more mutual consultation. In some areas, there is a tendency for insurance companies to set fees. In some instances there is agreement that the physician will accept the insurance payment as the full and only compensation for a given service; this has both good and bad features. Will this lead to standardized fees and ultimate abolition of a "sliding scale" of fees? Again, it should be pointed out, the insurance companies have helped to fight the spectre of Socialized Medicine in many ways. Mutual efforts to solve these problems are necessary and entirely practical; organized medicine and the insurance companies share a common aim: good service to the public.

What position should the medical profession take on the problem of Medicare? This program subsidizes the medical care of dependents of military personnel. It was used as an additional enticement to encourage enlistments in the military service. Is it wiser to defray these medical bills under Medicare, or to increase the pay of military personnel? Is this type of paternalism desirable?

Perhaps, in the backs of the minds of many physicians is the lingering feeling that the Third Person in the physician-patient relationship may lead to a standardization of fees and to closed panel practices. The realization of such a situation would have a very adverse effect on the high quality of medical care being offered in this country, and for this reason alone any trend in this direction should be countered through intelligent planning and positive substitute measures.

The real cause of this trend lies not within the medical profession, but comes

from without. Inflation has raised the cost of medical expenses, although not disproportionately to other expenses; people are willing to buy material objects but there is a reluctance to pay higher prices for services. The growth of paternalism in government has led to a preference by the public for the government to arrange for many services and benefits that could be handled more cheaply by the individual.

Organized medicine is meeting these challenges through the A. M. A. on a national basis. Intelligent programs of study and action by the component medical societies will do much to buttress medicine's fight to give better service to the individual and the community in the framework of our current economic structure.







**DR. F. J. L. BLASINGAME**

Executive Vice President  
AMERICAN MEDICAL ASSOCIATION

Dr. Blasingame will address the House of Delegates at its meeting on Sunday afternoon,  
April 12th, 4:30 p. m. Members and guests are invited to attend.







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# *P R O G R A M*

## **EIGHTY-THIRD ANNUAL SESSION**

### **ARKANSAS MEDICAL SOCIETY**

### **GOLDMAN HOTEL, FORT SMITH**

**APRIL 12, 13, 14, 15, 1959**

## **A N N O U N C E M E N T S**

### **DERMATOLOGY SECTION MEETING**

The Section on Dermatology will meet Sunday morning, April 12th, at 10:00 a. m. in the Cooper Clinic Building, 100 South 14th Street. Dr. Harold O. Perry of the Mayo Clinic, Rochester, Minnesota, will be the guest speaker.

### **REGISTRATION—**

The registration desk will be located in the lobby of the Goldman Hotel and will be open from 11:00 a.m. to 5:00 p.m. on Sunday, April 12th, from 9:00 a.m. to 5:00 p.m. Monday and Tuesday and from 9:00 a.m. to noon on Wednesday.

Delegates are requested to register as early as possible, presenting credentials in proper form at the time of registration. Members and visitors are required to register, as admission to all sessions will be by badge. Bring your 1959 membership card to facilitate registration. Members of the American Medical Association from other states may register as guests.

Special telephone service will be maintained at the registration desk; phone number SUNset 5-2184. Please advise your office that you can be reached at that number from 9:00 a.m. to 5:00 p.m.

### **MEETINGS OF THE COUNCIL**

The Council of the Arkansas Medical Society, including past presidents, will meet as follows:

Sunday Afternoon, April 12th, 2:00 p.m., Goldman Hotel

Monday, April 13th, 12:00 noon, Goldman Hotel

Tuesday, April 14th, 12:00 noon, Goldman Hotel

Wednesday, April 15th, 9:00 a.m., Goldman Hotel

### **CLASS OF 1939**

The Arkansas Class of 1939 will hold a reunion dinner at 6:30 p.m. in the Gold Room of the Ward Hotel on Sunday, April 12th. All members of the class are urged to attend.

### **FLYING PHYSICIANS ASSOCIATION**

Arkansas Flying Physicians luncheon will be held in the Goldman Hotel on Monday, April 13th, at 12:00 noon.

### **FIFTY YEAR CLUB BREAKFAST**

A breakfast for members of the Fifty Year Club of the Arkansas Medical Society will be held in the Goldman Hotel, at 7:30 a.m. on Tuesday, April 14th. Members are requested to contact Dr. J. H. McCurry, Fifty Year Club Secretary, at the Goldman Hotel before 7:00 p.m. on Monday.



### **PAST PRESIDENTS' BREAKFAST**

The past presidents' breakfast will be held in the Goldman Hotel at 7:30 a.m. on Wednesday, April 15th.

### **ELECTION TO FILL VACANCIES ON THE ARKANSAS STATE BOARD OF HEALTH**

Vacancies occur in the Third and Sixth Congressional Districts, the counties of which are listed below. All members from these counties are eligible to attend the meeting and vote for nominees.

**THIRD DISTRICT.** Baxter, Benton, Boone, Carroll, Crawford, Franklin, Johnson, Logan, Madison, Marion, Newton, Scott, Searcy, Sebastian, Van Buren, Washington. Present member: Dr. D. W. Goldstein, Fort Smith, who is eligible for reappointment. Members will please meet in the Main Dining Room of the Goldman Hotel immediately following the House of Delegates meeting on Sunday, April 12th.

**SIXTH DISTRICT.** Arkansas, Chicot, Cleveland, Dallas, Desha, Drew, Garland, Grant, Hot Spring, Jefferson, Lincoln, Lonoke, and Saline. Present Member: Dr. J. P. Price, Monticello, who is eligible for reappointment. Members will please meet in the Main Dining Room of the Goldman Hotel immediately following the House of Delegates meeting on Sunday, April 12th.

### **ELECTION TO FILL VACANCY ON THE ARKANSAS STATE MEDICAL BOARD**

A vacancy occurs in the Sixth Congressional District, the counties of which are listed below. All members from these counties are eligible to attend the meeting and vote for nominees. Please meet in the Main Dining Room of the Goldman Hotel immediately following the House of Delegates meeting on Sunday, April 12th. Counties of Sixth Congressional District: Arkansas, Chicot, Cleveland, Dallas, Desha, Drew, Garland, Grant, Hot Spring, Jefferson, Lincoln, Lonoke, and Saline. Present Member: Dr. Frank Burton, Hot Springs, who is eligible for reappointment.

### **GOLF TOURNAMENT**

The Annual Golf tournament will be played at Hardscrabble Country Club. Registration for the tournament will be at the Club and play may be on Sunday, Monday, or Tuesday. Chairman of the Tournament is Dr. Ralph Downs of Fort Smith. Ladies: The course will be open to wives of physicians if they wish to play.

**HOUSE OF DELEGATES**

**Sunday, April 12th, 4:30 p.m.**

**Main Dining Room, Goldman Hotel**

Address by Dr. F. J. L. Blasillgame, Executive Vice President,  
American Medical Association

**FIRST GENERAL SESSION**

**Monday, April 13th, 8:30 a.m.**

**Main Dining Room, Goldman Hotel**

**Louis K. Hundley, Pine Bluff, President, Presiding**

8:30- 9:00 Call to order

Invocation: Father Tom Walsh, Immaculate Conception  
Church, Fort Smith

President's Address: Louis K. Hundley, Pine Bluff

**Scientific Session**

**Randolph Ellis, Malvern, First Vice President, Presiding**

9:00- 9:30 "Cutaneous Reactions to Some Newer Drugs" — Harold O.  
Perry, Section of Dermatology, Mayo Clinic, Rochester,  
Minnesota

9:30-10:00 "Human Factors in Space Flight"—Lt. Col. George R. Stein-  
kamp, M.C., U.S.A.F., School of Aviation Medicine, Ran-  
dolph AFB, Texas

10:00-10:30 Visit exhibits

10:30-11:00 "Clinical Recognition of Dissecting Aneurysm"—I. Frank  
Tullis, Professor of Medicine, University of Tennessee,  
Division of Medicine, Memphis, Tennessee

11:00-11:30 "The Evaluation of Permanent Impairment of the Extremi-  
ties and Back"—J. E. Markee, Professor and Chairman,  
Department of Anatomy, Duke University, Durham,  
North Carolina

11:30-12:00 "Diagnosis and Treatment of Hypotension Occurring During  
Anesthesia and Surgery"—M. T. Jenkins, Professor and  
Chairman, Department of Anesthesiology, University of  
Texas, Southwestern Medical School, Dallas, Texas

**SECOND GENERAL SESSION**

**Monday, April 13th, 1959, 1:10 P.M.**

**Main Dining Room, Goldman Hotel**

**Robert H. Atkinson, Hot Springs, Second Vice President, Presiding**

1:10- 1:30 FILM: "Human Gastric Function"

1:30- 2:00 "Vaginal Bleeding at or Near Menopause"—Conrad G. Col-  
lins, Professor and Head of Department, Obstetrics and  
Gynecology, Tulane University School of Medicine, New  
Orleans, Louisiana

2:00- 2:30 "Radiation Therapy for Carcinoma of the Breast"—Hugh F.  
Hare, Los Angeles Tumor Institute, Los Angeles, Cali-  
fornia

2:30- 3:00 Visit Exhibits



ARKANSAS MEDICAL SOCIETY MEETING, APRIL 12-13-14-15, 1959

- 3:00- 3:30 "Management of Patients With a Hearing Impairment"—Howard House, Clinical Professor and Head, Department of Otolaryngology, University of Southern California School of Medicine, Los Angeles, California
- 3:30- 4:00 "Third Party Payment for Medical Care"—Frank C. Coleman, President, College of American Pathology, Des Moines, Iowa
- 4:00- 4:30 "Recent Advances in Antibiotic Therapy in Pediatrics"—Harris D. Riley, Professor of Pediatrics, University of Oklahoma School of Medicine, Oklahoma City, Oklahoma

**Monday Evening, April 13th**

**7:00 p.m., Hardscrabble Country Club**

**Cocktail Party—Buffet Dinner**

**Skit by Sebastian County Medical Society and Auxiliary**

Shuttle buses will operate from the Ward and Goldman Hotels from 6:30 to 8:00 p.m. and from 9:30 to 11:00 p.m. Please advise reservation desks if you want to ride the bus.

**FINAL GENERAL SESSION**

**Tuesday, April 14th 8:25 a.m.**

**Main Dining Room, Goldman Hotel**

**Paul Ledbetter, Jonesboro, Third Vice President, Presiding**

**(The E.E.N.T. SECTION will meet at St. Edwards' Nursing Home beginning at 10:00 a.m.)**

- 8:25 -9:00 FILM:"Recognition and Management of Respiratory Acidosis"
- 9:00- 9:30 "Hip Conditions — Early is Too Late" — Allen F. Voshell, Baltimore, Maryland
- 9:30-10:00 "Present Status of Leukemia"—William Dameshek, Chief of Hematology, New England Center Hospital, Boston, Massachusetts
- 10:00-10:15 Visit Exhibits
- 10:15-10:45 "Urological Problems in Children"—Edgar Burns, Chief, Urological Section, Ochsner Clinic, and Professor of Urology, Tulane University School of Medicine, New Orleans, Louisiana
- 10:45-11:15 "Some Common and Uncommon Problems in Biliary Surgery"—Kenneth W. Warren, Lahey Clinic, Boston, Massachusetts
- 11:30-12:00 Memorial Service  
Louis K. Hundley, President, Presiding  
Invocation: The Reverend Fred G. Roebuck, First Methodist Church, Fort Smith  
Reading of names of deceased Auxiliary Members, Mrs. Gordon P. Oates, President, Woman's Auxiliary to the Arkansas Medical Society  
Reading of the names of deceased members of the Arkansas Medical Society—Louis K. Hundley, President  
Memorial Address: Rodger C. Dickinson, DeQueen  
Solo: Mr. Paul Sandahl  
Benediction: Reverend Roebuck

**Tuesday, April 14th**  
**SPECIALTY SECTION MEETINGS**

(There is no general session scheduled for Tuesday Afternoon, April 14th)

**EYE, EAR, NOSE AND THROAT**

Auditorium of St. Edwards Nurses' Home, one block east of Goldman

- 10:00 a.m. "Honesty in Health Insurance," Chairman of Section, J. W. Smith, Little Rock
- 10:30 a.m. "Recent Developments in Otological Surgery," Howard House, Los Angeles
- 12:15 p.m. Luncheon and Business Meeting—Main Dining Room of St. Edwards Hospital
- 1:30 p.m. "Case Report," Stanley R. McEwen, Fort Smith, Arkansas
- 2:00 p.m. "Technique of Cataract Extraction," with movies, Tullos O. Coston, Oklahoma City, Oklahoma
- 3:00 p.m. A.—"Comments on Operative Treatment Retrolental Fibroplasia"  
B.—"Comments on Combined Treatment for Retinoblastoma"  
Tullos O. Coston, Oklahoma City

**INTERNAL MEDICINE**

The Section on Internal Medicine will meet for luncheon at the Goldman Hotel at 12:00 noon, April 14th.

- 2:00 p.m. "Amphotericin-B Therapy in North American Blastomycosis"—Dr. Thomas Jansen
- 2:30 p.m. "Hemolytic Mechanisms"—Dr. William Dameshek
- 3:20 p.m. Intermission
- 3:30 p.m. Panel: Hematologic Problems  
(Questions from the audience are invited)  
Drs. Dameshek, F. Douglas Lawrason, S. William Ross, and F. Stanley Porter

**ORTHOPEDICS**

The Arkansas Orthopedic Society will meet for lunch at 12:00 noon on April 14th in the Ward Hotel, followed by a scientific meeting with Dr. Allen F. Voshell as guest speaker.

**OBSTETRICS AND GYNECOLOGY**

The Section on Obstetrics and Gynecology will meet for luncheon in the Goldman Hotel at 12:00 noon, April 14th. Conrad G. Collins of New Orleans, Louisiana, will present a paper on "Vulvar Pathology".

**RADIOLOGY**

The Section on Radiology will meet for luncheon in the Goldman Hotel at 12:00 noon, April 14th. Hugh F. Hare of Los Angeles will discuss "Lymphoid Tumors".

**PEDIATRICS AND UROLOGY**

The Sections on Pediatrics and Urology will combine for a luncheon meeting in the Goldman Hotel at 12:00 noon on April 14th. "Congenital



Abnormalities of the External Genitalia" will be discussed by Harris D. Riley of Oklahoma City and Edgar Burns of New Orleans, Louisiana.

Following the combined meeting, the pediatricians will hear Dr. Riley discuss "Rheumatoid Arthritis in Children".

### **SURGERY**

The Surgeons will meet for luncheon in the Goldman Hotel at 12:00 noon, April 14th. Guest speaker will be Kenneth W. Warren of Boston, Massachusetts, who will discuss "A Panorama of Pancreatic Surgery".

### **ANESTHESIOLOGY**

The Section on Anesthesiology will meet in the Goldman Hotel at 1:30 p.m. M. T. Jenkins of Dallas, Texas, will present a paper on "Respiratory Physiology of Significance to Anesthesiologists".

**4:30 P.M., Tuesday, April 14th**

**TOUR OF SPARKS MANOR**

**2121 Towson Avenue, Fort Smith**

Members of the Society and the Auxiliary are invited to tour this recently completed million dollar geriatric nursing home. The administrator of the hospital will be on hand to supervise tours of the Manor showing the latest in physical therapy equipment and the newest ideas in domiciliary care.

**Tuesday Night, April 14th**

**ANNUAL BANQUET AND INSTALLATION OF PRESIDENT**

**7:00 P.M., Masonic Temple, 200 N. 11th Street**

Master of Ceremonies: Robert Thompson

Dinner by ladies of the Eastern Star

Awarding of the first three golf prizes: Dr. Ralph Downs

Installation of President

Wright Hawkins Introducing President Louis K. Hundley

### **DANCE**

**Tuesday Night, April 14th**

**9:00—12:00**

**Eagles Hall—North "A" and 8th Street**

### **FINAL SESSION**

**HOUSE OF DELEGATES**

**Wednesday, April 15th, 1959, 10:00 a.m.**

**Goldman Hotel**

### **COUNCIL MEETING**

The new Council will convene for a brief reorganizational meeting immediately following adjournment of the House of Delegates.

## CONSTITUTIONAL AMENDMENTS

The following amendments were read to the House of Delegates at its May, 1958 Meeting. They will be considered for final approval or disapproval during the 83rd Annual Session:

### CONSTITUTION

#### Article II

To add the words: "to maintain medical ethics and to secure compliance with the art of medical practice (each phrase in this section to be serially numbered).

#### Article VI

To delete the words "secretary and treasurer," substituting therefor the hyphenated word, "secretary-treasurer," and change to:

SECTION 1. The Council shall consist of the Councilors, President, First Vice-President, President Elect, Secretary-Treasurer. The Speaker and Vice-Speaker of the House of Delegates and past Presidents shall be members ex-officio without vote. There shall be two councilors from each council district, thus eliminating the present office of vice-councilor. All councilors shall have equal voting privileges. A majority of the voting members shall constitute a quorum.

SECTION 2. In any councilor district in which there is a city with a doctor population of 60 or more members of the Arkansas Medical Society, that city shall automatically be represented by a councilor. The other councilor to come from the remaining counties which constitute that councilor district.

#### Article VIII

Section 2. Delete the second sentence beginning with "after conferring" and ending "the meeting is to be held" and substituting therefor; "The time for holding each annual session shall be decided by the Committee on Arrangements of the Arkansas Medical Society and the President and the Executive Secretary."

#### Article IX

Section 1. To delete the words "secretary and treasurer," substituting therefor, the hyphenated word, "secretary-treasurer."

#### Article X

To serially number the present two paragraphs. To delete the figure "25.00" in the first paragraph and to substitute therefor, the figure "50.00."

#### Article XI

Section 2. To delete the word "on" in the last paragraph, substituting therefor, the word "upon."

#### Article XII

To add the words "by action of the House of Delegates" to the sentence in this article.

### BY-LAWS

#### CHAPTER V

Changed to read:

Section 1. In the event of the death or removal of the President-Elect, or his inability to serve, the House of Delegates shall meet within thirty days in special session or otherwise,

called by the President, to nominate and elect a President-Elect, provided that such death, removal or inability to serve shall occur not less than sixty days prior to an annual session, in which event the election shall be at the forthcoming annual session.

Section 2. At least ninety days prior to the annual meeting of the Society, the Councilor of each of the several districts shall call a meeting of the delegates of the component societies within his councilor district. In districts where the terms in office of the Councilor and Vice-Councilor expire at the next annual meeting, the delegates attending said district meeting shall then select a Councilor and Vice-Councilor to take office concurrently with the President of the State Society and to serve for the ensuing two (2) year term.

Section 3. At the district meetings provided for in Section 2 above, the delegates of each district shall select one (1) delegate to serve on a Committee on Nominations. No member of the nominating committee shall succeed himself and where possible, the member of the nominating committee shall be elected from a different county in each councilor district in a manner of rotation. The Committee on Nominations thus comprised of one delegate so selected from each of the ten councilor districts, shall then meet on call of the President of the Society prior to the annual meeting, organize itself, and prepare a slate of nominees consisting of two (2) candidates for each of the offices to be filled at said annual meeting. Provided, no two candidates for the office of President-Elect shall be named from the same County. The slate of nominees so selected shall be published in the official publication of the Arkansas Medical Society at least thirty (30) days prior to the annual meeting and the Executive Secretary of said Society shall furnish to the President of each County Society a copy of the slate of nominees so selected.

Section 4. All elections shall be by printed ballot, and a majority of the votes cast shall be necessary to elect.

Section 5. In the balloting for nominees, if on the first ballot, no one receives a majority of the votes cast, the name receiving the smallest number of votes shall be dropped, and the balloting shall proceed in this manner until an election is had.

Section 6. The report of the Nominating Committee shall be the first order of business of the House of Delegates, after reading of the minutes, on the afternoon of the last day of the annual session.

Section 7. The election of officers shall be the second order of business of the House of Delegates on the afternoon of the last day of the annual session.



Section 8. Nothing in this Chapter shall be construed to prevent additional nominations be made by members of the House of Delegates.

#### CHAPTER VI

##### Section 4

Section 4. The Secretary-Treasurer, in the case of vacancy in the office of Executive Secretary, shall assume the duties of that office pending the filling of the vacancy, and shall perform such other duties as are imposed in this Constitution and By-laws. He shall be the scientific and professional advisor of the Executive Secretary, and shall assist the Executive Secretary concerning all matters without the jurisdiction of one not holding the degree of doctor of medicine. He shall give bond in the sum directed by the Council. He shall demand and receive all funds due the Society, together with

bequests and donations. He shall pay money out of the treasury only on a written order of the Executive Secretary and he shall subject his accounts to an annual audit and shall annually render an account of his doings and of the state of the funds in his hands.

Section 6, to be re-numbered Section 5.

Section 7, to be re-numbered Section 6.

Section 8, to be re-numbered Section 7.

Section 9, to be re-numbered Section 8.

#### CHAPTER X

Section 1. Delete the word "twenty" in the second sentence and substitute therefor, the word "thirty."

Section 3. Re-number as Chapter XI.

Section 4. Re-number as Chapter XII. Chapter XI Re-number as Chapter XIII.

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## COMMERCIAL EXHIBITORS

The business firms who purchase exhibit spaces at our annual session contribute a great deal to the financing as well as to the education aspects of the meeting. The number of visits to the commercial exhibits are the only criteria by which these companies can judge the value they receive from the investment in booth rental, displays and employee's time. You will be rewarded for the time you spend visiting the following exhibits:

#### KAY SURGICAL COMPANY, INC., Memphis, Tennessee

Two of our representatives, Mr. Van Oliver of El Dorado and Mr. Frank Miros of Fort Smith, will be on hand to show such items as electrocardiographs, ultrasonics, office hematocrit centrifuges, and other items of specific interest to the doctor.

#### WINTHROP LABORATORIES, New York, New York

Trancopal, a new major chemical contribution to therapeutics, a nonhypnotic, muscle relaxant and tranquilizer which combines high clinical effectiveness with low toxicity ("as safe as aspirin"), 100 mg. Caplets (average dose 1 Caplet t.i.d.).

#### HERBERT COX CORRECT SHOES, Little Rock, Arkansas

Herbert Cox Shoes find use in medicine far beyond the treatment of flat or deformed feet. A senior executive member of the Little Rock firm will be present to answer questions.

#### PARKE, DAVIS AND COMPANY, Detroit, Michigan

Medical Service members of our staff will be in attendance at our booth to discuss important Parke-Davis specialties which will be on display.

#### A. S. ALOE COMPANY, St. Louis, Missouri

Visit Booth 6 where the A. S. Aloe Company will have on display a cross section of the most

complete line of physicians' and laboratory supplies. Your A. S. Aloe representative will appreciate the opportunity to discuss mutual items of interest with you.

#### THE COCA-COLA COMPANY, New York, New York

Ice-cold Coca-Cola served through the courtesy and cooperation of the Coca-Cola Bottling Company of Fort Smith, Fort Smith, Arkansas, and the Coca-Cola Company.

#### MEAD JOHNSON AND COMPANY, Evansville, Indiana

The Mead Johnson exhibit has been arranged to give you the optimum in quick service and product information. To make your visit productive, specially trained representatives will be on duty to tell you about their products.

#### J. A. MAJORS COMPANY, Dallas, Texas

The latest books and editions of W. B. Saunders Company will be available for your examination. Some of the newer ones are as follows: 1959 Current Therapy; DePalma-Atlas of Fractures and Dislocations; Wohl-Long Term Illness; new 10th edition of Cecil-Textbook of Medicine; new 7th edition of Nelson-Textbook of Pediatrics; new 4th edition of Duncan-Metabolism and many others.

#### KELEKET X-RAY COMPANY OF ARKANSAS, Little Rock, Arkansas

**CENTRAL SURGICAL COMPANY, INC.,**  
Little Rock, Arkansas

Exhibit will feature a NEW CONCEPT in furniture for the physician's examining room, ALLISON "75." The Allison 75 collection, the answer to the physician's search for handsome furniture which possesses countless built-in features to ease his tasks. It blends finely grained walnut with polished aluminum and caps it with a practical shield of ice white formica. It is designed by Donald Deskey Associates, New York City.

**G. D. SEARLE AND COMPANY,**  
Chicago, Illinois

You are cordially invited to visit the Searle booth where our representatives will be happy to answer any questions regarding Searle Products of Research. Featured will be Dartal, the new tranquilizing agent; Enovid, the new synthetic steroid for treatment of menstrual disorders; Zanchol, a new biliary abstergent; Nilevar, the new anabolic agent, and Rolicton, a new safe, non-mercurial oral diuretic.

**PFIZER LABORATORIES**  
Brooklyn, New York

Visit the Pfizer display which features Cosa-Tetracycl, Cosa-Terramycin and Cosa-Signemycin, Pfizer's glucosamine potentiated antibiotics. The Pfizer Representative will be pleased to provide you with information on Diabinese — a new oral hypoglycemic agent, Vistaril which is classified by the Council on Drugs of the American Medical Association as a Psychotherapeutic Antihistamine, and Daricon — a new anticholinergic compound possessing a high order of therapeutic effectiveness and prolonged duration of action.

**ELI LILLY AND COMPANY,**  
Indianapolis, Indiana

You are cordially invited to visit the Lilly Exhibit located in Space Number 14. The Lilly sales people in attendance welcome your questions about Lilly products and recent therapeutic developments.

**SCHERING CORPORATION,**  
Bloomfield, New Jersey

Schering welcomes the doctors of Arkansas. We cordially invite you to visit the Schering booth where representatives will be on hand to discuss with you the most recent advances in tranquilizer, antihistaminic and corticosteroid therapy. Products such as Schering's TRILAFON, POLARAMINE and DERONIL will be featured.

**ABBOTT LABORATORIES,**  
North Chicago, Illinois

Exhibit will feature the Abbott Laboratories Antibiotic Triad — three products which together provide control of all coccal infections: Erythrocin® Stearate, Compocillin®-VK and Spontin®. Also shown will be Abbott's unique new "metered release dose form" products, Tral Gradumets® and Desoxyn Gradumets®, plus a selection of other Abbott specialties.

**A. H. ROBINS COMPANY, INC.,**  
Richmond, Virginia

DIMETANE, Robins' "unsurpassed" antihistamine is featured in tablets, elixir Extentabs and the new injectable dosage forms. Also shown are the digestive enzyme supplement ENTOZYME, the PABALATE antirheumatic formulations and the various forms of DONNATAL.

**WM. T. STOVER COMPANY, INC.,**  
Little Rock, Arkansas

Bill Stover will have the usual fine display (in Booths 18 and 19) of the latest surgical and X-Ray equipment and supplies. Many new items will be shown to make your attendance worthwhile. The only old items you'll see at Stover's booth will be Mr. Stover and his same 'ole representatives he's had around for years.'

**MERCK, SHARP AND DOHME,**  
Philadelphia, Pennsylvania

A new and very promising adrenocortical steroid is featured at the Merck, Sharp and Dohme booth. DECADRON dexamethasone possesses all the basic actions and effects of other glucocorticoids but in different degree. Its anti-inflammatory activity is more potent on a weight basis than any other known glucocorticoid. Electrolyte imbalance is not ordinarily a therapeutic problem. Neither abnormal salt and water retention nor potassium excretion are discernible in most patients receiving therapeutic dosages. DIURIL — a diuretic compound that possesses favorable biologic properties common to both the mercurial preparations and the carbonic anhydrase inhibitors is also of interest. Technically trained personnel will be present to discuss these and other subjects of clinical interest.

**GENERAL ELECTRIC**  
**X-RAY DEPARTMENT,**  
Oklahoma City, Oklahoma

**SANDOZ PHARMACEUTICALS,**  
Hanover, New Jersey

Sandoz Pharmaceutical cordially invites you to visit our display at booth 22. MELLARIL—the tranquilizer with a selective action (i. e.—no action on vomiting centers). This unique action gives specific psychic relaxation with safety at all dosage levels. BELLERGA—Space Tabs assures around the clock control of functional complaints (example O menopause symptoms) in the periphery where they originate. CAFERGOT PB—the oral medication for the relief of migraine headache with G. I. disturbance accompanied by tension. Any of our representatives in attendance will gladly answer questions about these or other Sandoz products.

**E. R. SQUIBB AND SONS,**  
New York, New York

E. R. Squibb and Sons has long been a leader in development of new therapeutic agents for prevention and treatment of diseases. The results of our diligent research are available to the Medical Profession in new products or improvements in products already marketed. At Booth 23, we



are pleased to present up-to-date information on these advances for your consideration.

**EATON LABORATORIES,  
Norwich, New York**

Furadantin,<sup>®</sup> a specific for urinary tract infections, provide rapid bactericidal action against a wide range of gram-positive and gram-negative bacteria and organisms resistant to other agents. In six years of extensive use in the treatment of genitourinary tract infections, development of bacterial resistance remains negligible with Furadantin. New Furacin<sup>®</sup> Cream now available to control infection and facilitate tissue repair of the vagina, cervix, anorectal area and elsewhere when a cream base of fine consistency is preferred. It is water-miscible, self-emulsifying in body fluids, esthetically acceptable and ideal for hospital use.

**AMERICAN FERMENT COMPANY, INC.,  
New York, New York**

Featuring the digestant, choleric laxative action of CAROID AND BILE SALTS TABLETS as a logical complement in modern methods of therapy. Stop by for a personal supply of AL-CAROID ANTACID or FALGOS, the buffered analgesic advertised only to the profession. Also featured: SUPLIGOL, a whole bile, bile acid compound tablet.

**HOLLAND-RANTOS COMPANY, INC.,  
New York, New York**

You are invited to discuss with representatives: Mechanical advantages of contouring Koro-flex diaphragms; new, improved Nylmerate Jelly and Solution for vaginal leucorrheas; special Koromex (A) for use where "jelly-

alone" is indicated; beneficial cutaneous effects of Hollandex Ointment (with Silicones and natural Vitamins A & D) upon contact—and neurodermatitis, decubitus ulcers, diaper rash, skin dryness/chafing, etc.

**ARKANSAS MEDICAL AND  
HOSPITAL SERVICE, INC.,  
Little Rock, Arkansas**

**HEALTH INSURANCE COUNCIL,  
New York, New York**

Our exhibit is designed to provide general information on health insurance as underwritten by insurance companies. In addition, it also makes available information on uniform claim forms for use by doctors and hospitals in support of health insurance claims.

**DOHO CHEMICAL CORPORATION,  
New York, New York**

Doho Chemical Corporation is pleased to exhibit: AURALGAN—Otitis Media and removal of Creumen; OTOSMOSAN—Fungicidal and Bactericidal in the suppurative and aural dermatomycotic ears; RHINALGAN—Nasal decongestant free from systemic or circulatory effect; LARYLGAN—Throat spray and gargle for infectious and non-infectious sore throat involvements. Mallon Chemical Corporation, Division of Doho: RECTALGAN—for relief of pain and discomfort in hemorrhoids, pruritus and perineal suturing; DERMOPLAST — an Aerosol Spray for surface pain, burns and abrasions; obstetrics and gynecology use.

**CARRTONE LABORATORIES,  
Metairie, Louisiana**



## ANNUAL COMMITTEE REPORTS

### ANNUAL COMMITTEE REPORTS COMMITTEE ON CANCER CONTROL

Jean C. Gladden, Chairman

The Committee on Cancer Control has not met as a unit during the past year. The members of the Committee on Cancer Control of the Arkansas Medical Society are, according to the by-laws of the Arkansas Division of the American Society, members of the Board of Directors of the Arkansas Division of the American Cancer Society. Most of the members of the Cancer Control Committee have attended the meetings of the Arkansas Division of the American Cancer Society and have been most helpful in advisory capacity to the Arkansas Division of the American Cancer Society. The Arkansas Division, Professional Education Committee as well as the Committee on Cancer Control of the Arkansas Medical Society is at present attempting to establish an adequate professional education program in regard to Cancer for the State of Arkansas.

### COMMITTEE ON RURAL HEALTH

Ben N. Saltzman, Chairman

The Committee on Rural Health this year has been actively making plans. At the present time there are plans afoot for an annual conference in July. This conference will be organized in cooperation with the Committee on Aging of the Medical Society. It is planned to invite key personnel from every county in the State to work out appropriate Rural Health plans, particularly concerning the treatment of the aging population.

Plans are also underway for the Committee on Rural Health to participate in the State-wide Rural Community Development contest and program. This enterprise will require considerable planning and will not go into effect until 1960. The Committee hopes by this means to get to the grass roots of the health problem in Arkansas and to come up with a constructive program for improving the health of our rural population. The topic that seems to hold the greatest amount of interest at the present time for this program is that of Tuberculosis. Our Committee has met frequently and with the program outlined for the immediate future will hold many more meetings. It is hoped that the work of this committee will continue to have the full support of all the membership of the Arkansas Medical Society.

The members of the Committee on Rural Health are: A. H. Maddox, Paragould; Duane E. Brothers, Little Rock; Edgar Easley, Little Rock; Huie H. Smith, North Little Rock; and Ben N. Saltzman, Mountain Home, Chairman. The members of the Advisory Committee are: Louis K. Hundley, M. D., Pine Bluff; Mrs. Gordon P. Oates, Little Rock; Mrs. Hoyt Choate, Little Rock; Mrs. William Wilkie, Widener; John T. Herron, M. D., Little Rock; William Cloud,

D. D. S., Little Rock; Mr. Austin Vines, Little Rock; Bryant B. Pake, D. D. S., Little Rock; Mrs. Mason Lawson, Little Rock; Mrs. Hazel Jordan, Little Rock; Mr. Waldo Frasier, Little Rock; Miss Helen Robinson, Little Rock; and Dr. Charles Henry, Little Rock, Chairman.

This chairman feels that he is very fortunate in having a committee that has continued to function over many years. This year it plans to function even more effectively than in the past.

### SUB-COMMITTEE ON MATERNAL AND CHILD WELFARE

Eugene H. Crawley, Chairman

The committee has been active in several fields of this broad subject assigned to it. The chairman attended the annual Petit Jean School Health Workshop last June. At this meeting a teacher's outline of school health was developed and revised for the public schools of Arkansas. This book is now being distributed by the State Health and Educational departments and will serve as a guide to the development and teaching of health in Arkansas schools.

The chairman of the committee representing the Arkansas Medical Society attended the Joint Health Council of the State Departments of Education and Health at its monthly meeting. His chief activities there has been the development of pilot school studies of fitness in twenty schools by the Department of Education in order to furnish data for the development of a youth fitness council and program in Arkansas. The aims are to improve the Youth Fitness in the state by improving and broadening the health and physical education programs.

The chairman was asked to serve on the medical committee of the Board of the Arkansas Children's Colony in order to formulate the medical policies of the colony in keeping with acceptable medical practices and maintaining a close contact with the physicians of the children who are to be admitted to the colony. Dr. Joe Rosenzweig who is a member of the Children's Colony Board served also in this capacity in working out the basic policies of admissions and medical care.

In addition to these above activities this committee outlined three other fields of activity to be explored and considered for areas to be improved. The first was the development of a committee in the state medical society to investigate fetal mortality and work for the improvement of natal and postnatal conditions and reduce fetal mortality in Arkansas which has actually shown an increase recently rather than a decrease. Dr. Kelsey of the Maternal and Child Welfare Committee has chosen this as his field of operation and is exploring means of developing such a committee in Arkansas. This problem is a difficult one and requires careful plan-



ning before it can be effective. The American Medical Association and the American Academy of Pediatrics can be relied upon for help and endorsement in this vital area.

The second challenge to our committee is that of School Health. There is a need for a subcommittee to work in this field. The school officials repeatedly ask advice and desire our cooperation but our response has been weak and often reluctant. The chairman has taken on the job of writing some guiding pamphlets for schools in cases of emergencies and general medical problems in order to aid and guide school authorities in such matters. It is hoped that these may be presented in printed form for use in the schools similar to first-aid booklets.

The third consideration of the committee was that of hospital acquired staphylococcus infections which has become such a difficult problem in newborn nurseries. The chairman represented the Arkansas Medical Society at the regional conference on Staphylococcus infections conducted by the United States Public Health Service in Dallas. The recommendations derived from this conference are included in this report and are intended by this committee as an outline that may be followed by a local society or hospital staff in organizing and conducting an infection committee. We shall be glad to provide further information on more details of such a committee if such is required. The outline as presented is intended only as a working outline to be adapted or changed according to the details of local needs. This committee goes on record recommending the following.

General recommendations are as follows:

Recognition of the problem of staphylococcus infections as one of global scope and is a hospital and community problem and must be dealt with on a continual basis—vigilance and alert.

Prevention and Control:

- I. Communication is of great importance and is accomplished in the following ways:
  - A. Hospital Infection Committee for surveillance, control and education.
  - B. Inter-Hospital communication for exchange of information between hospital.
  - C. Communication with health departments for laboratory and consultation aids.
  - D. Official reporting to the hospital staff and health department.
- II. Patient Care in the Hospital:
  - A. Admission policy that a tentative diagnosis be made to give the hospital warning to carry out isolation techniques.
  - B. Isolation of appropriate cases upon diagnosis.
  - C. Diagnosis and therapeutic techniques should be done only when necessary and under aseptic techniques.
  - D. Indiscriminate use of antibiotics and prophylaxis by antibiotics is to be condemned except in very carefully selected cases such as Rheumatic fever.
- III. Hospital environmental sanitation must be evaluated carefully. Hospital design and ventilation should be brought or kept up to

present recommended standards. House-keeping procedure must be evaluated and measures taken to prevent contamination from blankets, laundry, cleaning methods, and equipment.

- IV. Control of personnel carriers is the most difficult problem. These are those of the hospital staff with frank infections and those who are inapparent carriers and each case or situation requires careful consideration by the hospital. These carriers must be removed from sensitive positions and placed in neutral areas or given leave until they have recovered or are infection free.

It is the aim of the committee to amplify these recommendations of the state health department for use in the various hospital and medical societies of the state who are confronted with the problem of Staphylococcus infections.

## SUB-COMMITTEE ON INDUSTRIAL HEALTH

Noble Daniel, Chairman

Our Sub-Committee on Industrial Health has been practically inactive this year. We contacted the medical school on two or three different occasions with the idea of re-establishing a course there on industrial medicine but we have not heard from them one way or another and it was thought best to bide our time and maybe some time in the near future we can create some interest in industrial medicine.

## SUB-COMMITTEE ON TUBERCULOSIS

Sanford C. Monroe, Chairman

The committee did not find it necessary to hold a formal meeting during the year.

The chairman communicated with the respective members of the committee in regard to any problems which should be considered and reported.

The Committee unanimously recommends that the Society give full support to the proposed expansion of facilities at the McRae Tuberculosis Sanatorium.

## SUB-COMMITTEE ON MENTAL HEALTH

Henry M. Sims, Chairman

The Sub-Committee on Mental Health makes the following recommendations:

1. That the Insurance Committee of the Arkansas Medical Society seek to persuade the insurance companies to consider psychiatry patients in the same manner as other patients as far as bed and treatment benefits are concerned.
2. That not only psychiatrists but all members of the medical profession be asked to serve on this committee in the future.
3. That notice be given to the secretary of the Arkansas Medical Society concerning the psychiatric seminar to be held at the Medical Center on April 1st, 1959. This is to be presented by the Department of Psychiatry of the Uni-

versity of Arkansas Medical Center and co-sponsored by the Mental Hygiene Committee of the Arkansas Medical Society.

4. That study and revision of the Arkansas State Commitment Laws, particularly Act 3 be made and that Granville Jones, M. D., work with the Legislative Committee of the Arkansas Medical Society to revise Act 3.

5. The final item—it is this committee's feeling that there is a need for increased facilities for retarded children in the State and they commend the present and tentative program of the Arkansas Children's Colony.

### **SUB-COMMITTEE ON LIAISON WITH THE STATE BOARD OF HEALTH**

**W. Myers Smith, Chairman**

The Sub-Committee on Liaison with the State Board of Health held no formal meetings. However, since Dr. Hundley had expressed a desire for the State Medical Society to assist the Health Department in its efforts to obtain more funds, the Committee Chairman met with Drs. Herron and Easley in their office during October. The budget, current and future needs, general problems of the department and the ways and means the Society might be of assistance were discussed. It was apparent that the greatest need was for additional local or county health services—for funds and authorization of salaries adequate to attract qualified public health physicians, nurses and sanitarians. The Legislative Council had refused to consider any budget increase, so any such proposal would have to be introduced as new legislation with a source of funds to cover the increases requested.

The only suggested source of additional funds was an increase in the fees for certified copies of birth and death certificates and it was apparent that doubling the fee would bring only a fraction of the money needed for county health departments.

The State Health Officer prepared an outline budget of the additions needed and your committee chairman presented these facts to the House of Delegates. A motion was passed that the legislative committee of the Society give what assistance it could to the Health Department.

It is the private opinion of your Committee Chairman that there is relatively little chance for new tax money for these purposes being passed by this Legislature—but a step has been taken and a stand made.

### **POLIO ADVISORY COMMITTEE**

**Robert L. Henry, Chairman**

In 1959 the State Polio Advisory Committee met and it was our opinion that publicity regarding Polio immunizations should be done through the doctors' offices rather than have an extensive inoculation program throughout the State. Doctors throughout the State were contacted and at their request pamphlets regarding the Polio immunizations were sent to their of-

fices to be included in their monthly bills. Through this means of publicity there were ninety-one thousand folders sent throughout the State.

### **COMMITTEE ON MEDICAL EDUCATION**

**J. W. Kennedy, Chairman**

The Committee on Medical Education has met regarding the resolution passed by the State Medical Society House of Delegates on medical education and the teaching of some of the fundamentals of medical ethics to senior students at the University of Arkansas School of Medicine. The program is to be arranged before the preceptorship is started in the Spring including officers of the Medical Society and guest speakers, and members of the medical school staff. This program will be for the benefit of senior students going into their various preceptorships. This is in conjunction with the Postgraduate Medical Education Committee, with the assistance of Dr. John Riffin of the University Medical Center.

A meeting is scheduled to be held in February or March to further set up this program.

### **REPORT OF THE SUB-COMMITTEE ON POSTGRADUATE EDUCATION OF THE ARKANSAS MEDICAL SOCIETY**

**John T. Riffin, Jr., Chairman**

This committee met in joint session with the Committee on Education of the Arkansas Academy of General Practice on June 18, 1958. The following two paragraphs extracted from the minutes of that meeting reflect the general objectives and plan of approach to postgraduate education during 1958-59:

"It is the stated purpose of each of the two committees and of the University of Arkansas Medical Center to reinstate an active program of postgraduate education as early as possible. Discussion toward this end centered first around the types of courses which might be employed. The collective opinion of those present appeared to be that there would be both advantages and disadvantages to the short form (one day) as well as to the more extended type (two or three days) of postgraduate course. Employment of both types of courses would probably attract a wider range of physicians than either of the two alone.

"The initial effort should be directed primarily toward men in general practice, with the main emphasis upon clinical problems. It is recommended that registration be limited so as to promote and permit active participation in the exercises by the registrants. A fee appropriate for the type of course should be charged."

Subsequently seven courses were announced the subject material of which included tuberculosis, traffic injuries, antibiotics, Pediatrics in general practice, Obstetrics-Gynecology in gen-



eral practice, diabetes, hepatobiliary tract disease, gastro-intestinal bleeding, and clinical electrocardiography. An additional course entitled "Seminar on Psychiatry for General Practitioners" is planned for early April.

Plans for the courses to be given during 1959-60 by the School of Medicine are being developed. A questionnaire will be circulated to the medical profession to aid in evaluating current courses and to obtain further information regarding matters of course types, scheduling, subjects, etc.

### **SUB-COMMITTEE ON LIAISON WITH BLUE CROSS-BLUE SHIELD**

Gerald H. Teasley, Chairman

The Blue Cross-Blue Shield Liaison Committee has had two called meetings during the past year to discuss problems concerning medical care of individuals using this service. A tremendous problem confronts the medical profession today in the medicare care of the aged. Recommendations have been sent to the Council concerning investigation of this problem.

It is suggested that all physicians in Arkansas keep abreast of the reports issued from time to time in the Journal of the American Medical Association concerning action of the House of Delegates about insurance plans for the aged. With longevity increasing, the number of people reaching this age group is increasing yearly.

### **COMMITTEE ON HOSPITALS**

Julius H. Hellums, Chairman

There has been no activity of the Committee on Hospitals. Nothing has been referred to this Committee for the past year. In December 1958 the Chairman forwarded letters to each member of the Committee and the Executive Secretary of the Arkansas Medical Society asking each if they knew of any problem that should be studied by the Committee. No problem or subject has been reported to the Chairman as of this date.

### **COMMITTEE ON ARRANGEMENTS FOR ANNUAL SESSION**

S. Wright Hawkins, Chairman

Your committee met with the Council and suggested that the Annual Session this year start with business meetings and the first meeting of the House of Delegates on Sunday afternoon; thereby condensing the scientific part of the program into the next two days in hopes that better attendance would be secured for out-of-state speakers.

A recommendation was also made to the Council that within 30 days of his election, the president of each specialty section of the Arkansas Medical Society submit to the chairman of the Committee on Arrangements the names of two men, either one of which they would like to have appear on their program. It would then fall the duty of the Committee on Arrangements to obtain one of these men to speak on the general

program. If the guest speaker appeared on the general program, then his expenses would be defrayed by the Medical Society.

### **REPORT OF PUBLIC RELATIONS COMMITTEE**

C. Lewis Hyatt, Chairman

Activities of the Public Relations Committee during the past year have been essentially as follows:

(1) Aided and cooperated with Dr. L. H. McDaniel of Tyronza in the "Festival of Faith" held at Tyronza October 2nd. We aided him to some extent financially and by publicity. I believe this to be the outstanding medical public relations activity of our society this year.

(2) Released occasional releases in the public relations column of the State Journal and a regular news release locally in the Advance Monticellonian entitled "You and Your Doctor."

(3) Sponsored Senior Medical Students Day as previously.

(4) Distributed Public Relations pamphlets and literature and correspondence from the AMA Public Relations Unit.

Medical "public relations" has become most important. However, due to no uniformity of opinion, activities in this field have become quite difficult since these activities sometimes are interpreted as contrary to our understanding of professional ethics. It is my recommendation that the Council study this problem very carefully and make some concrete recommendations.

I think it would be most helpful if some mechanism were at hand to distribute promptly to the public media any material which should be released in the way of public relations. To this end, I think it would be very wise if the Public Relations Committee were made up of a select group of the elder members of our society, specifically the past presidents who would and could do this type of work without criticism from members of the society.

### **SUB-COMMITTEE ON STATE HEALTH AND MEDICAL RESOURCES FOR CIVIL DEFENSE**

M. J. Kilbury, Jr., Chairman

The Sub-Committee on State Health and Medical Resources for Civil Defense has been inactive for the past year.

### **ADVISORY COMMITTEE TO THE ARKANSAS MEDICAL ASSISTANTS SOCIETY**

Perry J. Dalton, Chairman

This Committee wishes to report on its activities as follows: It is the opinion of this Committee that the Arkansas State Medical Assistants Society has made considerable progress during the past year. In May, 1958 the Society held the annual State Convention in Fort Smith; at which time there were approximately 75 members registered and in attendance.

Since their annual convention in May, 1958, they have added a new County Society in Ashley County and have added approximately 35 new members. They are now in the process of organizing two additional counties.

There have been two meetings of the House of Delegates attended by 33 members on each occasion and with one or more of the members of this Committee in attendance each time.

At the last House of Delegates Meeting, considerable plans were made for the annual convention to be held in Camden in May of this year. The various committees are in the process of making final arrangements for the convention.

It is anticipated that approximately 85 to 90 members will register and attend the convention in 1959.

The Society has made it a practice to send the President-Elect to the National Convention each year with expenses paid.

It is the opinion of this Committee that the Arkansas State Medical Assistants Society is making good progress. We feel that it is serving a useful purpose and we recommend to the Medical Society of each county that they give this organization their encouragement, support, and help them to organize a chapter in their respective county.

## ANNUAL REPORT OF INSURANCE COMMITTEE

Sam G. Jameson, Chairman

### I. Accident and Health Insurance

On February 27, 1958, a conference was held at the State Capitol in regard to complaints against certain accident and health insurance companies and their agents. In attendance were Mr. Harvey Combs, State Insurance Commissioner, Mr. Glynn Sawyer, Attorney for Insurance Department, Senator Marshall Shackelford, Mr. Marcus Holbrook, Executive Secretary for Arkansas Legislative Council, Doctor T. D. Brown, Doctor James Kolb, Mr. Paul Schaefer, and members of the Insurance Committee. After reviewing numerous documented complaints, it was agreed by all present that our present laws were not adequate to deal properly with these complaints, and it was suggested that remedial legislation be introduced in the 1959 Legislature, either as a part of the revised Insurance Code or as an amendment to the Code.

A joint meeting was held on March 2 with the Board of Trustees of Arkansas Hospital Association, Medical Committee on Arkansas Claim Managers Council, and Insurance Committee of Arkansas Medical Society. Special guests were Mr. Harvey Combs, Mr. Glynn Sawyer, and Mr. Noel Sanborn, representative of Health Insurance Council from New York. Complaints by the Arkansas Medical Society and the Arkansas Hospital Association were reviewed. It was further agreed by all present that remedial legislation was needed. Mr. Sanborn also suggested the formation of a joint committee representing

try and work out some of our problems on a voluntary basis.

Mr. Combs called a meeting on April 22, 1958, of all insurance companies writing accident and health insurance in Arkansas for the purpose of discussing types of policies now being sold and also the possibility of using uniform claim forms by all companies. As previously suggested by Mr. Noel Sanborn, an outgrowth of this meeting was the formation of the Hospital-Insurance-Physicians (HIP) Committee, with its primary purpose to try and solve and correct on a voluntary basis problems which now exist in the accident and health insurance field. The HIP Committee membership is composed of three representatives from the Arkansas Hospital Association, three representatives from the Arkansas Medical Society (appointed from the Insurance Committee of the Society), one representative from Blue Cross-Blue Shield, and nine representatives from the insurance industry (three from individual accident and health companies, three from group accident and health companies, and three from weekly or disability income companies). Much of the activities of the Arkansas Medical Society Insurance Committee which pertain to accident and health insurance have been carried out through the HIP Committee since its formation.

The initial project of this committee was standardization of accident and health insurance claim forms, and after several meetings of all segments, both separately and jointly, the forms recommended by the Health Insurance Council of America were approved, and will be adopted by the State Insurance Commissioner beginning April 15, 1959.

The HIP Committee is deeply indebted to Mr. Noel Sanborn, Representative of the Health Insurance Council, who made five trips to Arkansas from New York to help with organization of this committee and the work on standard claim forms.

Other problems pertaining to accident and health insurance are being discussed from meeting to meeting, and as final decisions are made and results obtained, this information will be disseminated to all concerned through appropriate news media. If any physician, hospital, or patient has a complaint against any insurance company or its agent, documented evidence should be submitted to the Insurance Committee, which will present this information to the HIP Committee for action. The HIP Committee has completed investigation of several complaints against one company out of this state, and appropriate corrective measures have been taken by the company to see that complaints and abuses previously occurring do not happen again.

In addition to work with the HIP Committee, the Chairman of the Insurance Committee testified before the Arkansas Legislative Council Committee on Corporations, Insurance, and Banking, on June 19, 1958, presenting documented complaints against certain companies and agents, proving the need for improvement of our laws. Following this meeting, the full Legislative Council made certain recommendations to the Arkansas Insurance Code Commission, relative to qualification and licensing of agents, minimum bene-



fits in all policies and formation of an Accident and Health Insurance Commission. The Chairman of the Insurance Committee and Senator Marshall Shackleford subsequently testified before the Insurance Code Commission on July 24, 1958, requesting that the Legislative Council recommendations be included in the revised Code.

In spite of the Legislative Council recommendations, the Insurance Code Commission did not include these recommendations in the revised Code presented to the State Legislature in 1959, and therefore Senator Marshall Shackleford introduced two amendments to the Code, which were passed by the Senate. These amendments provided for a stringent licensing law for accident and health insurance agents, and directed the Insurance Commissioner to prescribe minimum benefits provisions to be included and made a part of every policy sold in Arkansas. At the time of this report, the Senate still has to vote on the entire revised Code with these two amendments, and of course final passage will rest with this action by the Senate and subsequent action on the Code by the House.

The Committee does feel that progress has been made in correcting problems in the accident and health insurance field, but there is still considerable work to do.

## II. Malpractice Insurance

After reviewing malpractice insurance rates in Arkansas, California, Colorado, Florida, Louisiana, Missouri, Mississippi, Oklahoma, Tennessee, Texas, and Oregon, it was obvious that the rates in Arkansas were next to the lowest with only Texas having a very slightly lower rate than Arkansas. After contacting several companies, it was discovered that group rates could not result in decreased premiums, and most companies had no desire to write group malpractice insurance. The possibility of the Society becoming its own insurer was considered, and it was pointed out that there would be considerable administrative expense and problems involved, and legal disadvantages were also pointed out. As a result of this study, the Committee recommends that each individual physician member of the Arkansas Medical Society continue his present individual coverage.

## III. Group Life Insurance

A sub-committee composed of Doctor T. D. Honeycutt and Doctor Bill Dave Stuart reviewed applications from six companies with proposals of group life insurance. After very carefully considering all advantages and disadvantages of each proposal, this sub-committee recommended Northwest National Life Insurance Company. The Insurance Committee accepted this recommendation, and submitted it to the Council on January 29, 1959. A detailed report of this proposal is being mailed to all members of the Council for study, so that an early decision can be reached.

If the Council approves this proposal prior to our Annual Meeting, the company will have a booth and representatives at the meeting in Fort Smith and will be open for enrollment at that time.

## COMMITTEE ON CONSTITUTION AND BY-LAWS

W. R. Brooksher, Chairman

The Committee met January 18th, 1959, and submits the following recommendations:

With reference to proposed amendments submitted to the 1958 annual session of the Arkansas Medical Society and published in the June 1958 issue of the Journal of the Arkansas Medical Society:

ARTICLE II—To add the words: "to maintain medical ethics and to secure compliance with the art of medical practice (each phrase in this section to be serially numbered)." Approved.

ARTICLE VI—Disapproves combining the offices of Secretary and Treasurer. Further amends Section 1 to read: ". . . There shall be two councilors from each councilor district to serve staggered terms of two years each." Section 2—Disapproved.

ARTICLE VIII—Approved

ARTICLE IX—Disapproved

ARTICLE X—Approved

ARTICLE XI—Approved

ARTICLE XII—Approved

## BY-LAWS

CHAPTER V, Section 1—Approved.

Section 2. Further amended to read: "At least ninety days prior to the annual meeting of the Society, the Councilors of each of the several councilor districts shall call a meeting of the delegates of the component societies within their district. The delegates attending said district meeting shall then select a Councilor to take office concurrently with the President of the State Society and to serve for the ensuing two (2) year term."

Section 3. Further amended to read: "at the district meetings provided for in Section 2 above, the delegates of each district shall select one (1) delegate to serve on a Committee on Nominations. No member of the Nominating Committee shall succeed himself and, where possible, the member of the Nominating Committee shall be selected from a different county in each councilor district in a manner of rotation. The Committee on Nominations, thus comprised of one delegate from each of the ten councilor districts, shall then meet on the call of the President of the Society prior to the annual meeting, organize itself, and prepare a slate of nominees consisting of two (2) candidates for each of the offices to be filled at the said annual meeting. Provided, no two candidates for the same office shall be named from the same county. The slate of nominees so selected shall be furnished the Journal of the Arkansas Medical Society at least sixty (60) days prior to the annual meeting and shall be published in the Journal of the Arkansas Medical Society in the issue which next precedes the annual session. Further, the Executive Secretary shall furnish a copy of the slate of nom-

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inees so selected to the president of each county medical society."

Section 4—Approved.

Section 5—Approved.

Section 6—Approved.

Section 7—Approved.

Section 8—Approved.

CHAPTER VI, Section 4—Disapproved.

CHAPTER X—Approved.

The Committee submits the following amendments:

CHAPTER VIII, Section 5—Amending the second sentence to read: "The enforcement of sanitary laws, the study of the aging population through a sub-committee on Aging, and to exercise leadership in the health problems of school children through a sub-committee on Physical Fitness and School Health."

## BUDGET COMMITTEE

W. R. Brooksher, Chairman

The Budget Committee respectfully submits the following proposed budget for 1959:

### INCOME

Membership dues .....	\$ 34,000.00
Journal Advertising .....	35,500.00
Booth Income .....	4,500.00
Annual Session Banquet and Registration .....	5,500.00
AMA Reimbursement .....	240.00
Income from Medicare .....	24,000.00
Miscellaneous .....	350.00
Interest on Bonds .....	171.00
Employee Contribution, Retirement Fund .....	151.20
	<hr/>
	\$104,412.20

### EXPENSES

Salaries—	
Journal .....	\$ 7,200.00
Medicare .....	12,690.00
A.M.S. ....	7,600.00
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Total .....	27,490.00
Journal Printing and Expense .....	27,000.00
Travel and Convention .....	8,250.00
Stationery and Printing .....	750.00
Office Supplies and Expense	
Medicare .....	4,200.00
A.M.S. ....	2,000.00
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Total .....	6,200.00
Telephone and Telegraph .....	2,300.00
Rent .....	1,716.00
Taxes .....	500.00
Council Expense .....	500.00
Postage .....	2,800.00
Dues and Subscriptions .....	450.00
Contributions .....	600.00
Annual Session .....	7,025.00
Rural Health Committee .....	500.00

Public Relations Committee .....	500.00
Senior Medical Day .....	500.00
Woman's Auxiliary .....	1,100.00
Special Committees .....	400.00
Auditing	
Medicare .....	870.00
A.M.S. ....	255.00
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Total .....	1,125.00
Miscellaneous .....	500.00
Bond Premiums and Insurance	
Medicare .....	325.00
A.M.S. ....	355.00
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Total .....	680.00
Legal Services .....	4,600.00
Retirement Fund .....	2,418.00
Office Equipment .....	500.00
Contingency Fund "A" .....	5,000.00
Depreciation Reserve .....	675.00
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	\$104,079.00

## COMMITTEE SENIOR MEDICAL DAY

W. R. Brooksher, Chairman

The 1958 Annual Senior Day was well attended and enthusiastically received by the 1958 graduating class of the University of Arkansas School of Medicine. The Committee feels that this activity should be continued.

## TRAFFIC SAFETY COMMITTEE

C. Lewis Hyatt, Chairman

Activities of the Traffic Safety Committee for the past year have been as follows:

(1) Recommendations from members of the committee which is made up of the vice-councilors of all the ten districts were received and consolidated into a report. This report, entitled "Traffic Accidents," was published in the Journal of the Arkansas Medical Society, issue of July, 1958. This report also had wide distribution through major newspapers of the State and several radio and television news releases.

(2) Distributed through members of the committee safety pamphlets and correspondence relating to traffic safety from various agencies such as the AMA Traffic Safety Committee, the National Safety Council, the U. S. Post Office Department, and numerous other traffic safety organizations.

(3) Recommended and sponsored with the Arkansas Academy of General Practice and the Lederle Company a symposium at Little Rock on November 9, 1958, the afternoon session of which was devoted to "Traffic Injuries."

(4) Wrote letters urging better law enforcement as relating to traffic safety to numerous interested groups, including the Arkansas State Bar Association, the Arkansas State Police, and various law enforcement agencies and groups in this area.

Activities in the field of traffic safety are most important and every effort in that direction is to be aided and commended.



## ARKANSAS STATE ADVISORY COMMITTEE TO THE SELECTIVE SERVICE SYSTEM

Gerald H. Teasley, Chairman

There was very little activity in this field. The Committee had actually been retired from active service but letters were received from Washington, D. C., several months later, and it was requested that information be given on isolated cases in order that the Selective Service System might better carry out its function. Only a few cases were directed to this committee during the year. It is assumed that unless more active military work is scheduled, that this committee will have very few cases upon which to act during the coming year.

## COMMITTEE ON AGING

L. E. Drewery, Chairman

The Chairman of the Committee on Aging of the Arkansas Medical Society had the privilege of attending the National Conference on Problems of the Aging sponsored by the AMA in Chicago, Illinois, September 21-22, 1958. During this conference informative addresses were delivered, round table discussions were carried out and a summary of the discussions is now a part of the records of the Arkansas Committee on Aging.

At the National Conference an urgent plea was made for the setting up of state conferences to carry out the recommendations of the National Conference with the commendations that the State Committee on Aging of the AMS play a predominate part in the formation of a greater state wide committee and to work together with the governor's office and his agencies in forming an effective state wide committee to study and find effective solutions to the problems of our aging.

On Sunday, January 18 the first committee meeting of the members of the Committee on Aging of the AMS was held at the Marion Hotel in Little Rock and plans were formulated for setting up this greater committee for state wide action. On Sunday, February 1, 1959 this greater committee meeting was held in Little Rock with the following members present: L. E. Drewery, M. D., Chairman; John Greutter, M. D.; Lon Reed, M. D.; Dr. Easley, Representative of Arkansas State Board of Health; Ben Saltzman, M. D., Chairman of Rural Health Committee; Rick Campbell of Blue Cross-Blue Shield; Paul Schaefer, Executive Secretary of Arkansas Medical Society; Mr. Bill Beaumont, President Arkansas State Association of Licensed Nursing Homes, Inc.; Miss Dorothy Funk, President and Miss Hilda Scott, Executive Secretary of Arkansas Registered Nurses Association; Mr. John Rowland, Representative of the AMA Council on Medical Service; Mr. Graham Nixon, Executive Secretary Arkansas Hospital Association. The only member of the committee that was absent was Mrs. George Gephardt, Executive Director Arkansas State Practical Nurses Association.

This preliminary meeting lasted for over three hours with the following accomplishments:

1. John Rowland orientated the committee on the latest developments taking place in other states and explained the six fields of major endeavor recommended by the AMA.

2. Rick Campbell and Paul Schaefer reported to the committee on an Insurance meeting held the previous day on the program of pre-paid medical care on the aging who were able to carry their own insurance, and Rick Campbell reported on progress made at a conference between Blue Cross-Blue Shield and the Welfare Department on a contract with the welfare patients similar to the welfare plan in Colorado. The committee endorsed both approaches by the insurance representatives on problems of the aging.

3. Bill Beaumont was instructed to survey all licensed nursing homes in the state as to type of personnel, the cost of patient care and to make a survey of possible need for capital outlay and how they might be financed. Mr. Beaumont was to report back at our next meeting to be held within one month.

4. Dr. Salzman and the Committee agreed that the problems of the aging would be the subject for the next Arkansas Rural Health Conference to be held July 13th. It is believed that this conference will serve to bring attention to the solutions being proposed for problems of the Aging.

This committee recognizes the importance of the problems of the aging and its many aspects and will do its utmost to find satisfactory solutions wherever possible. The committee will continue to work in close harmony with the AMA and will do its utmost to make a definite contribution to the White House Conference which will be held in 1961.

## STATE PROFESSIONAL RELATIONS COMMITTEE

Jabez Jackson, Chairman

The Professional Relations Committee met at the Marion Hotel in Little Rock September 21st, 1958, at 11:00 a. m. Present were: Louis K. Hundley, Ross Fowler, Joe F. Rushton, R. R. Kirkpatrick, Jabez Jackson, Henry Hollenberg, Elvin Shuffield, James M. Kolb, John Wood, Sanford C. Monroe, Thomas M. Durham, and Mr. Schaefer.

President Hundley reviewed the duties and responsibilities of the Professional Relations Committee with special emphasis on the handling of Medicare claims.

Mr. Schaefer discussed the mechanics of handling Medicare claims and reviewed the Medical Society's responsibility for maintaining a committee to advise the Government on claims under the Program. He also reviewed the changes to become effective October 1, 1958.

The meeting recessed for lunch.

By vote of those present, Dr. Jabez Jackson was elected chairman and Dr. Ross Fowler was elected secretary.

After lengthy discussion of the Medicare Program and the proposed changes, the Committee voted to recommend to the Council:

1. That the contract with the Government for Medical Society participation not be renewed as of April 1st, 1959;
2. As an alternate to complete withdrawal from the Program, the Committee voted to recommend action similar to that of the Arizona Medical Association requiring the Government to authorize each claim before payment is made.
3. As a second alternative, that in questionable cases the Professional Relations Committee of the Society be the final authority on whether or not a surgery fee shall be paid.

The Committee plans to have another meeting with the new President of the Arkansas Medical Society in the Fall.

### **FIRST COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE**

**R. C. Shanlever, Chairman**

As chairman of the First Councilor District Professional Relations Committee, I am glad to report that, to the best of my knowledge, and am happy to say, that we have had no complaints to come before our Committee during the past year.

### **SECOND COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE**

**Jabez Jackson, Chairman**

During the past year this District has been asked to review and adjust five Medicare Cases. These were not complaints but a difference of interpreting the fees Medicare had contracted to pay. All the physicians have been very cooperative.

We have had no complaints from private patients in this district.

### **THIRD COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE**

**Milton C. John, Jr., Chairman**

During the past year the committee has passed on several complaints through the Medicare Program. An opinion was reached in each case and the decisions were forwarded for further study.

One grievance was discussed regarding fee charged by a physician which is still pending. After investigation, the patient was advised to contact the State Professional Relations Committee and present facts for any adjustment.

### **FOURTH COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE**

**H. T. Smith, McGehee**

No complaints have been filed with this district committee during the past year.

### **SIXTH COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE**

**R. R. Kirkpatrick, Chairman**

The committee—composed of Dr. J. G. Martindale of Hope, Dr. O. G. Hirst of Prescott and myself—has had five claims to consider in the past year. All of these were between the physician and the U. S. Government by way of Medicare. Three telephone conferences were held and two personal conferences to dispose of these five cases. As chairman I made one trip to the meeting in Little Rock to attend the Professional Relations Committee Meeting on September 21, 1958.

### **SEVENTH COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE**

**J. W. Kennedy, Chairman**

There have been no cases passed on by this committee this year. Two cases have been referred to the Chairman in which one was involving surgery and a surgeon in Pulaski County—it was referred to the Pulaski County Professional Relations Committee. The other case was a complaint received by letter indirectly referring to a complaint in an adjoining county outside of this councilor district.

### **EIGHTH COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE**

**Henry G. Hollenberg, Chairman**

In this district we continue to have a County Professional Relations Committee which handles all complaints and grievances pertaining to patients. Our District Committee has considered only one such case and it came to us because it originated in another district. This was a complicated case brought about by a lack of understanding on the part of the patient's family.

Our committee consisting of Dr. Joe Sanderlin, Dr. T. J. Raney and the undersigned has had a heavy load of Medicare bills to review. These average about one a day. The difficulty in many of these bills is brought about by the simple fact that the physicians and their secretaries are not familiar with the ever changing requirements. In other cases there are complications due to a multiplicity of physicians handling the same patient. More recently and since the changed requirements of October the 1st, 1958, the greatest problem pertains to a decision as to the responsibility of the Medicare Program in the light of their new policy of handling emergencies only. In view of the variation of emergency situations this amounts to a complex problem and one which in the final analysis is usually decided in Washington.

### **TENTH COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE**

**Art B. Martin, Chairman**

The activity of the Tenth Councilor District



Professional Relations Committee has been confined to the review and rendering of opinions regarding Medicare claims. There have been no medical legal problems submitted to this committee during 1958.

## REPORT OF DELEGATE TO A.M.A.

Sam G. Jameson, Delegate

The meeting in Minneapolis was the first AMA meeting which I have attended as a state delegate. I was deeply impressed by two things, the efficient organization of the AMA headquarters staff, and the democratic principles which are in constant use in committee hearings and in the House of Delegates meeting. I am firmly convinced that if every member of the AMA could attend these meetings, the idea of a few individuals in an "ivory tower" running the AMA would soon be dispelled. If any physician has an idea which he would like to have approved by the AMA, I am positive that he will get results if his idea is thought to be worthwhile by the majority. In numerous cases I observed reports being changed as a result of individual testimony in committee hearings, amendments being made to resolutions on the floor of the House of Delegates after being discussed openly and freely by anyone and everyone who desired, and in general the democratic principle of free expression of opinion and vote being exercised. Some resolutions which were approved by the House of Delegates originated on county levels, and it is for this reason that any person who objects to final decisions of the AMA should take a more active interest and part in his county and state organization.

It was my privilege to attend the Conference on Federal Medical Services preceding the opening of the 12th Clinical Meeting, at which all facets of Veterans' Medical Care and Medicare were discussed with regard to problems and future of these two programs.

The House of Delegates was opened by an impressive address by Dr. Gunnar Gundersen, President of the AMA. Following this keynote, Minnesota Governor Orville E. Freeman made what was to me a most significant address, in which he very poignantly "laid it on the line" that organized medicine and voluntary health insurance companies had better provide more complete and adequate insurance coverage for older aged groups (specifically meaning the cost of medical care), or else government would intervene in the near future. To quote directly from his address: "When government provided hospital and medical care for the victims of long, expensive, chronic ailments such as tuberculosis and mental illness, it did so for similar reasons (referring to earlier statement that government provided schools simply because that was the only possible way that they could be made available to all). It was socially desirable that the people suffering from such ailments be given care and treatment. Very few could afford such long and expensive care. The people asked for the government to provide it, because that was the only way it could be made available. The

same principles hold true, I believe, in all other areas where government performs functions relating to medicine."

To further quote Governor Freeman: "Thus far, private, voluntary insurance programs, however rapidly they have grown as a whole, are least effective for the age group over 65. Employee group programs (group insurance) often cease with retirement, and premium costs for individuals of that age are generally too high for them to pay. It is because of this great need that legislation has been proposed in Washington, and no doubt, will be proposed again, to expand the federal and social security program to include hospital and medical insurance benefits under Old Age and Survivors' Insurance. Now, you certainly have the right to oppose such legislation if you believe it would be harmful to your profession. You have a duty to oppose it if you believe it would be harmful to the public. But if you do oppose it, you also have the responsibility of helping to work out an alternative program to meet the need that we all know exists and becomes more serious every day. A solution is urgently needed. We want to make sure that other senior citizens whose incomes are small, yet enough for independence as long as no extraordinary expenses are required, need not become medical indigents when they become ill. We want personal dignity as well as health for our later years. The proposal to include medical and hospital care insurance under O.A.S.I. benefits does offer one solution. It may not be a complete solution or the best solution. It may not be acceptable to you or to the Congress. But it would offer help to state governments, hard pressed to find ways to meet all the needs for services for which they are responsible. Difficult as these problems are, I, for one, will never recommend curtailing medical care for our senior citizens. Rather they need better care and they will need other social services which will make their lives happier and more constructive. Can you help us find a way to apply the voluntary health insurance principles to elderly and retired people? Can you help us develop a program, that is within our means, to provide the kind of preventive care and attention that would make the sunset years healthier and happier? It is certain that we must find a solution, without further delay."

Following the first meeting of the House of Delegates at which reports of all standing committees of the House and special committees were made, I attended the hearings by the Reference Committee on Insurance and Medical Service. Following these hearings, the House of Delegates acted on reports and recommendations from this reference committee as follows:

1. Approved the recommendation that the Report of the Commission on Medical Care Plans be received without discussion and that further action be deferred until the June, 1959, session of the House of Delegates, and suggested that the constituent state associations review this report in the interim and arrive at some decision in regard to these basic points:

A. Free choice of physicians—Acknowledging the importance of free choice of physicians, is this concept to be considered a fundamental principle, incontrovertible, unalterable, and essential to good medical care without qualifications?

B. Closed Panel Systems—What is or will be your attitude regarding physician participation in those systems of medical care which restrict free choice of physician? Your delegates from Arkansas would like to know the attitude of our Society in regard to these two matters, so that we may cast our votes in June to represent the majority opinion or attitude of our Society members. Also, the House recommended that the Board of Trustees invite the constituent associations to forward their replies to these questions to the Executive Vice-President sixty days in advance of the June, 1959, meeting.

2. Adopted a report that the American Medical Association, the constituent and component medical societies, as well as physicians everywhere, expedite the development of an effective voluntary health insurance or prepayment program for the group over 65 with modest resources or low family income; that physicians agree to accept a level of compensation for medical services rendered to this group, which will permit the development of such insurance and prepayment plans at a reduced premium rate.

3. Approved a plan to develop "BUYERS' GUIDES" which will be sent to physicians to help their patients analyze the merits of available health insurance programs.

4. Authorized the Council on Medical Service to sponsor at the earliest practicable date a Congress on Prepaid Health Insurance.

5. Took notice of the recent restrictive changes in the Medicare program; expressed regret at the substitution of federal facilities for private care in the areas mentioned, and urged the Association to encourage the re-establishment of services under the free choice principle to accomplish the original intent of the act.

6. Reaffirmed the policy adopted by the House in November, 1956, stating that "Veterans' Administration facilities should be used only for the care of service connected diseases and disabilities, and that the care of non-service connected conditions should be the responsibility of the individual, or, if he is medically indigent, of his community or state."

7. Approved recommendation that Social Security Act be amended by Congress to permit states to combine the present four Public Assistance medical programs into a single program, administered by a single agency and making available uniformity of services to all eligible Public Assistance recipients in the state.

There were many other items discussed and resolutions passed by the House of Delegates pertaining to other phases of medicine, all of which have been reported earlier in the Journal of the American Medical Association.

After getting home and reviewing all of the resolutions adopted in Minneapolis, and reflect-

ing on the various committee hearings and addresses, and especially the address by Governor Freeman, I am firmly convinced that the only road to continuation of nongovernmental medicine with free choice of physicians is the development of adequate voluntary health insurance for any and every person who wishes to purchase it. This insurance, in my opinion, should be non-cancellable after one or two years to protect the patient who develops an incurable disease with a long course, adequate or nearly adequate to provide payment for hospital and physicians services, and reviewed at annual intervals by each state society, so that undesirable policies can be replaced. If adequate and reliable voluntary health insurance is not provided, and in the immediate future, the people of America are going to their professional politicians and demand exactly what Governor Freeman has warned us about, governmental control of medicine.

It was a distinct pleasure, honor, and privilege to have served as a delegate from Arkansas.

## REPORT OF THE COUNCIL

Joe Verser, Chairman

During the year 1958-59, the Council of the Arkansas Medical Society conducted business as follows:

On May 7th, the Council met immediately following the Annual Session and elected Joe Verser Chairman and re-elected Alfred Kahn, Jr., as editor of the Journal. The Council accepted an invitation from the Jefferson County Medical Society to hold the July Council meeting in Pine Bluff.

On July 13th, the Council:

1. Voted affiliate membership for Charles W. Hall of Greenwood;

2. Referred to the Liaison Committee on Blue Cross-Blue Shield a suggestion that the Committee be increased to three members from each councilor district;

3. Upon the resignation of R. B. Robins as Arkansas delegate to AMA, the Council elected Sam Jameson to fill Dr. Robins' unexpired term.

4. Changed the name of the Brooksher Student Loan Fund to the Dr. and Mrs. W. R. Brooksher Student Loan Fund and directed that its use be broadened to include students in the paramedical fields;

5. Approved plans of the local committee on arrangements for the 1959 Annual Session, including a recommendation that the specialty sections be advised of the man in their specialty who will be on the general session program and whose expenses will be paid by the Society. The Council also approved limiting the 1959 Annual Session scientific meeting to two days.

6. Referred to the Public Relations Committee the 1957 Public Relations Committee's Report.

7. Agreed to a modification in the Medicare contract.

8. Voted to approve the administering of intradermal tuberculin tests by Public Health Nurses.



## ARKANSAS MEDICAL SOCIETY MEETING, APRIL 12-13-14-15, 1959

9. Directed that a telegram be sent to Congressman Mills in support of the ophthalmologists' position regarding aid to the blind under the Social Security Law.

10. Directed further study of a suggested blanket bond covering employees of the Society headquarters.

11. Authorized the Executive Secretary to mail educational material to non-member physicians, medical students and interns.

12. Approved a letter written by the Chairman of the Insurance Committee to be sent to the Insurance Commissioner.

13. Decided against accepting an application for membership of a licensed physician who graduated from a school which was not approved at the time of his graduation.

14. Approved the establishment of a Poison Control Center at the University of Arkansas Medical Center.

15. Approved a resolution memorializing Dr. Fred J. Gray, Jr.

16. Referred to the Budget Committee Dr. Kolb's suggestion that alternate delegates be sent to one meeting of the AMA each year.

17. Decided to hold the next meeting of the Council in Little Rock on October 26th.

18. Directed that an interim committee on aging be appointed to serve until the next annual meeting.

The Council met on October 26th and transacted the following business:

1. Accepted a gavel from past president T. Duel Brown.

2. Approved the minutes of the Executive Committee meetings of August 17th and October 2nd, which included the following actions:

A. Decided to circularize all county medical societies, giving reasons for opposing full licensure for osteopaths.

B. Authorized President Hundley to appoint the medical society member of the Executive Committee of the newly established Poison Control Center.

C. Directed that Mr. Peter Deisch be paid a retainer of \$300 for 1958.

D. Voted an increase in retainer to the Society's legal counsel.

E. Authorized an increase in salary for the Executive Secretary.

F. Authorized the Executive Secretary to purchase a blanket bond covering every employee in the amount of \$20,000.

G. Authorized President Hundley to appoint a representative to attend a meeting of the Department of Health, Education, and Welfare in Dallas.

3. Approved a plan developed by the Committee on Medical Education and the Medical Center to give instructions in medical ethics at the School by holding a preceptor day between the junior and senior years at the Medical School.

4. Directed that the Pulaski County Medical Society be commended for its contribution to the

Medical School for the purpose of establishing a chair for the study of virus diseases.

5. Decided to accept the changes in the Medicare contract dictated by the new Medicare regulations.

6. Directed the Executive Secretary to write the Medicare Washington Office that no claims would be paid until they had been authorized by the Washington Office.

7. Voted to commend the Insurance Committee for its diligence and approved the Society's not becoming its own insurer for malpractice liability insurance.

8. Approved the appointment of a sub-committee to consider a group life insurance policy for the members of the Society.

9. Voted to inform the Cancer Society that the number on the Society's Committee on Cancer Control was dictated by the Society's Constitution and could not be changed without a constitutional amendment.

10. Decided to invite the members of the liaison committee on Blue Cross-Blue Shield to its meeting on November 23rd.

11. Voted to call a special meeting of the House of Delegates to consider Legislative problems for November 23rd.

12. Voted to approve the Public Relations Committee's recommendation that the Society contribute \$100.00 to Dr. McDaniel's Tyronza meeting.

13. Accepted the resignation of Max Roy as councilor and elected Fay B. Millwee to serve Dr. Roy's unexpired term.

14. Voted to request the same committee to raise funds for the necessary functions to reelect Dr. Robins to a full term on the Board of Trustees of AMA.

The Council met on November 23rd and:

1. Heard a discussion by Dr. Ellery C. Gay, President of the Board of Trustees of Arkansas Blue Cross-Blue Shield, of the policies and future plans of that program. Voted to refer Dr. Gay's report to the Committee on Liaison with Blue Cross-Blue Shield.

2. Heard the newly elected member of Congress, Dr. Dale Alford, pledge his support of conservative views and his desire to fairly and effectively represent Arkansas people and physicians.

The Council met on January 29th and:

1. Nominated Dr. E. D. McKelvey of Paragould to serve out the unexpired term of Dr. Max Roy on the State Medical Board.

2. Voted to support a new basic science bill proposed by Mr. Warren and voted its congratulations to the Society's two attorneys — Mr. Warren and Mr. Lawrence Blackwell.

3. Approved a standard claims form devised by the Chairman of the Committee on Insurance.

4. Requested that copies of a proposed group life insurance policy be submitted to Council members.

5. Voted to approve expenses for the Society's legal counsel to attend an AMA regional medicolegal meeting in Salt Lake City.

# EXECUTIVE SECRETARY'S REPORT

Mr. Paul C. Schaefer

The Arkansas Medical Society passed a milestone in its history when in 1958, for the first time, the Society's income exceeded \$100,000. The growing income was a direct reflection of the ever-increasing activities of the Society and its headquarters. For the first time revenue from Journal Advertising greatly exceeded any other single source of income — accounting for 35 per cent of revenue. Members are urged to let our advertisers know by letter and in conversation with detail men that they see their products advertised in the Journal of the Arkansas Medical Society. Membership dues bring in only one-third of total income with Medicare responsible for twenty per cent. Annual Session registration, banquet tickets and booth income make up the bulk of the remaining twelve per cent. Expenses have risen as income increased.

A great deal of time and expense went into keeping our members advised on the legislative activities of the osteopaths and resulted in the legislature becoming aware of physicians' wishes in the matter. Wisely, the legislature emphatically rejected the unsound osteopathic proposals.

The increased activity of most of the committees of the Society resulted in the achievements listed in their annual reports. The headquarters is proud to have participated in the work and accomplishments of the committees.

## REPORT OF THE ARKANSAS STATE MEDICAL BOARD

Joe Verser, Secretary

The Secretary of the Arkansas State Medical Board makes the following report of the activities of this Board since the last meeting of the Arkansas Medical Society:

The Officers and Members are as follows:

G. D. Murphy, Jr., M. D., Chairman  
Wm. A. Snodgrass, Jr., M. D., Vice-Chairman  
Joe Verser, M. D., Secretary and Treasurer  
H. J. Hall, M. D.  
Frank M. Burton, M. D.  
Jeff Baggett, M. D.  
C. H. Young, M. D.  
J. Max Roy, M. D.  
Hugh R. Edwards, M. D.  
Mr. Eugene R. Warren, Attorney

The Board investigated every case of violation of the Medical Practice Act reported to the Secretary during the year. Four court convictions were obtained and three cases are now pending.

Because of our new Medical Practice Act, court convictions are easier to obtain and a number of quacks and charlatans immediately leave the state once legal action is started against them.

The Board revoked the license of one physician because of a narcotic violation, this physician having previously been convicted in Federal Court.

One physician voluntarily retired from the practice of medicine after an examination, at the Board's request, by three competent and impartial physicians. It was the opinion of the physicians who made the examination that he was not physically or mentally competent to practice medicine.

In the future, notices of the annual registration fee will be mailed on January 1st rather than December 1st. This action is being taken to minimize the loss of notices in the Christmas postal rush.

A yearly financial report of the Board's activities, as prepared by Winter, Johnston & Company, Certified Public Accountants, was sent to and approved by the Council of the Arkansas Medical Society and published in the Journal. Following is a report of the Board's proceedings from February 1, 1958 to February 1, 1959:

Physicians registered for 1959:

Resident .....	1,500
Non-resident .....	723
Physicians licensed by examination .....	90
Physicians licensed by reciprocity .....	32
Physicians certified to other states .....	73
Licenses revoked for non-payment of annual registration fee .....	30
Licenses suspended for non-payment of annual registration fee .....	34
Court convictions obtained for violation of Medical Practice Act .....	4
Cases pending for violation of Medical Practice Act .....	3
Licenses revoked .....	1

Following is a financial report covering the period February 1, 1958 to February 1, 1959. A yearly audit by a C.P.A. will be made in June, 1959. Cash balance in bank—

February 1, 1958 .....	\$14,570.10
Bonds and time deposit .....	8,242.40
	22,812.50

### RECEIPTS

Registration fees .....	\$ 6,590.00
Reciprocity fees .....	2,700.00
Certification fees .....	1,095.00
Four-year examination fees .....	550.00
Final examination fees .....	1,987.50
Primary examination fees .....	1,825.00
Duplicate certificates .....	10.00
Directory sales .....	147.00
Physical Therapy fees and dues .....	115.00
Temporary permits .....	65.00
Certifications to Basic Science Board .....	15.00
Interest on bonds .....	156.06
Miscellaneous—re-deposits, etc. ....	34.80
Funds on hand and not reported February 1, 1958 .....	107.00
	15,397.36
Total Cash Available .....	\$38,209.86

### DISBURSEMENTS

Salaries (Secretary and Clerical), FICA Taxes, fees and expenses of Board Members .....	8,686.92
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# ARKANSAS MEDICAL SOCIETY MEETING, APRIL 12-13-14-15, 1959

Attorney's fee, expense and investigations	3,464.95	
Dues and expenses to Federation of State Boards of U.S.	600.00	
CPA audit	175.00	
Refund of fees, returned checks, etc.	137.94	
Office rent, supplies, printing, telephone, postage, etc.	2,150.29	
Physical Therapy expense	14.95	15,230.05
Cash balance in bank— February 1, 1959	14,581.35	
Time Deposits	8,398.46	22,979.81
		38,209.86

## REPORT OF THE ARKANSAS STATE BOARD OF HEALTH

John T. Herron, State Health Officer  
Division of Public Health Education

The most important educational activity of this Division in terms of the number of people reached is the film library. There was a moderate increase in circulation in 1958. More adult groups are using films, especially churches and professional schools. Users are becoming more selective in their choice of titles. Because of reduced funds, fewer films are being purchased. This is expected to be offset somewhat by the new Federal aid to schools for audio-visual equipment and materials, so that in the future we expect to concentrate less on schools and more on adult groups.

Approximately 300 different health education publications are available without charge to the citizens of the State through local health departments. The Division of Public Health Education coordinates the procurement and utilization of these. While the reduction in funds is limiting our purchases of publications somewhat, we feel that by better use and more judicious distribution we can do as good a health education job as has been done previously even with literature supplies reduced.

The cause of health education is being helped considerably by the many television network programs on health problems, these sponsored by national organizations and agencies.

### The Hospital Division

During 1958, the Division of Hospitals licensed 158 hospitals and 80 nursing homes. Several new hospitals and nursing homes were licensed. Several old hospitals closed in cities where the new hospitals were constructed. Privately financed additions were constructed to sixteen nursing homes in the state adding a total of 243 beds. Three new privately financed nursing homes were completed.

Considerable progress has been made in obtaining compliance with the Licensing Law and Standards for Nursing Homes in the nursing homes in the state.

The annual revision of the "State Plan for the Construction of Hospitals and Related Facilities" was made as required under the Federal (Hill-Burton) Hospital Construction Program.

Under the Hill-Burton Program, nine hospital projects, one nursing home, one rehabilitation facility, and two public health centers were completed during the year. Construction is underway on eight projects at this time. One hospital has been completed with local funds. Two other privately financed hospitals are under construction and three sizeable locally financed additions to hospitals are under construction.

Plans and specifications for all hospital and nursing home construction in the state are reviewed and approved by the Division. Other services provided by Division personnel include inspection of all hospital and nursing home construction and routine inspections of hospitals, nursing homes, and buildings which are proposed to be used as nursing homes.

### Bureau of Vital Statistics

The Bureau of Vital Statistics was established by Act 96 of 1913. It is charged with the filing, compilation, analysis, presentation, and distribution of statistical events which include births, deaths, fetal deaths, marriages, divorces, annulments, legal separations, and adoptions.

A total of 42,453 births were recorded in the calendar year of 1957, representing a rate of 23.7 per 1,000 population. 15,919 deaths were recorded, showing a death rate of 8.9 per 1,000 population.

The ten principal causes of death for 1957 were as follows:

Causes of Death	Total	Rate Per 100,000 Pop.
1. Heart disease (all forms)	5,907	319.0
2. Vascular lesions affecting central nervous system	2,243	125.4
3. Neoplasm (cancer)	2,229	124.6
4. Accidents (all forms)	1,156	64.6
5. Pneumonia & Influenza	669	37.4
6. Nephritis & Nephrosis	288	16.1
7. Tuberculosis (all forms)	244	13.6
8. Birth injury, asphyxia, and infection of newborn	235	13.1
9. Immaturity (Prematurity)	221	12.4
10. Diseases of the liver, gall- bladder, and pancreas	188	10.5

Local registrars representing all districts in the state file certificates each month. A further consolidation of districts since last year brings the total number of registrars down to 213. At a rate of .25 for each completed certificate filed, a total of \$15,629.50 was paid to these registrars for their services during the fiscal year of 1957-58.

Contact is maintained constantly with local registrars, physicians, midwives, county health departments, undertakers, and hospitals in order to stimulate registration of births and deaths. The listing of local registrars, funeral homes, and physicians by counties, which was compiled,

bound in a volume of 108 pages, and mailed to each local registrar and funeral home last year, is being revised semi-annually and new pages are mailed out to replace the old pages. This listing has contributed greatly to a better registration of births and deaths.

All certificates of birth, death, stillbirth, marriage, and divorce are bound in volumes, indexed, and tabulated. Microfilm copies of all certificates of birth, death, and stillbirth; photostatic copies of all certificates of birth, death, and stillbirth which occurred within the state but of legal residence outside the state; and a ten percent sample of all deaths are mailed to the National Office of Vital Statistics, Washington, D. C.

All deaths are coded as to primary statistical cause according to the rules of the Manual of Joint Causes of Death as set forth in the International Statistical Classification of Diseases, Injuries, and Causes of Death.

10,051 delayed certificates and 15,799 prior to 1914 certificates of birth were placed on file during the year 1957.

During the fiscal year 1957-1958 a total of approximately 117,013 requests were received. This includes certified copies of records, verification of records, and checking of records. Approximately 12,000 corrections were made. The legal fee for a certified copy, effective as of February 12, 1955, is \$1.00. Fee for verification and checking of records is .50.

Received and processed during the year was an estimated number of 30,000 pieces of correspondence embracing the group of: no information; insufficient information; no filing fee; improper completion of certificates; etc.

Approximately 1,000 free copies of birth, death, marriage, and divorce records were issued free to the Veterans Administration and the State Director of the Arkansas Selective Service.

Requests made by telegram and long distance are given special attention. Assistance is given also to residents of Arkansas who were born in another state, in filing of the record in those states.

12,997 marriages and 5,500 divorce records were filed in the year 1957. This is a ratio of 2.4 marriages to one divorce. We are current in our alphabetizing, numbering, and binding of marriage and divorce records.

704 adoptions were processed during the year 1957.

Special reports are made through I.B.M. division for the Division of: Tuberculosis Control, Venereal Disease Control, Communicable Disease Control, and Maternal and Child Health.

#### Bureau of Local Health Services

Housing facilities for local health units continue to improve as local communities become more interested in the local public health program.

Although we are still losing full-time professional public health workers locally because of higher paying opportunities in other fields, we are still able to recruit new workers who are

interested in public health. The total number of such workers on duty is still far from adequate and is only approximately 50 percent of the number needed to render minimal adequate services. The rural areas of the State are suffering from a shortage of personnel more than the urban areas. Rural areas to date have only one public health nurse per 20,000 population as compared to one per 14,000 in the cities and urban areas of the State. To be adequately staffed, both area populations need one nurse for 5,000 to 8,000 population.

Although we are discouraged by the facts that Federal funds allocated to the State for public health purposes are gradually being reduced and that the General Assembly is not inclined to increase its appropriation to offset this loss, we are encouraged by the interest and action of several local communities in providing increases in local funds to improve and expand existing local health services. Local communities, counties, and cities are beginning to realize that the improvement and protection of the health of the public is a local, legal, and moral responsibility. The fact that advances in environmental sanitation and new medical discoveries have improved the public health and prolonged life span and thus have lowered death rates is also appreciated.

The State Health Department, with its Bureaus and Divisions, continues to render some direct services to the seventy-five counties of the state.

#### Communicable Disease Division

The activities of the Communicable Disease Division are largely dependent upon the notifications of disease as returned by the practicing physicians. Some strengthening of these notifications is needed and particularly from some of the institutions. The Division at this time is carrying on surveillance programs in relation to diphtheria, encephalitis, malaria, and poliomyelitis and polio-like diseases (aseptic meningitis, Coxsackie disease).

For the most part we have had excellent cooperation of the individual physician in collecting bodily specimens (feces and blood) for the polio program. Isolation of Type I or Type III polio virus has been had in most of the cases where paralytic polio was diagnosed. One of the so-called non-paralytic cases yielded Coxsackie B<sub>3</sub> virus, and one other yielded an unidentified virus. No ECHO (orphan) viruses have been isolated. Paralytic polio has been of low incidence during 1958, although there is still a great need for more universal vaccination of all children under ten years of age.

One apparent transfusion-malaria has been notified but so far the responsible blood donor has not been identified although five of six have been contacted and their blood checked.

Diphtheria which occurred in several counties last year has again appeared late in 1958 and has occasioned considerable concern in those areas affected. This disease which had all but disappeared in this State is again on the increase.



Neighboring states are having a similar experience.

Six chronic typhoid carriers have been identified and placed on the typhoid carrier register during 1958. Typhoid fever and other Salmonella and Shigella infections still demand considerable time and study by the public health worker.

#### Report of Veterinary Public Health Activities

The program which governs the activities in connection with the diseases of animals transmissible to man found it necessary to pursue matters of interest in almost every section of the State of Arkansas. Prevention and control of these diseases in man depends on the control of such diseases in animals.

Rabies, anthrax, brucellosis, and leptospirosis are a number of important zoonoses found in Arkansas, as well as many others which required careful consideration during the year 1958. For example, seven cases of cutaneous human anthrax were fully investigated during an outbreak of anthrax in livestock in Southeast Arkansas.

Efforts to expand the animal disease reporting program met with excellent success, and Arkansas now has a very complete animal morbidity report.

Assistance was provided in the development of the State Health Department Civil Defense Operational Plan for use in the event of a nuclear attack on the United States.

#### Division of Tuberculosis Control

The Division of Tuberculosis Control directed the supervision of 11,255 known cases of tuberculosis during the year 1958. A total of 1,195 new cases were reported within the year, the majority of them by private physicians. This morbidity rate of 63 per hundred thousand is well above the National average, and is an increase over the year 1957. The death rate decreased slightly but remains the third highest in the United States, surpassed only by Arizona and the District of Columbia.

Because of the continuing magnitude of the tuberculosis problem within Arkansas, an attempt is being made by the Division to alter somewhat the means of detection and control. Surveys by the Mobile X-ray Units are still discovering approximately 15 per cent of the new cases, with .3 per cent of all films taken showing some evidence of tuberculosis. For the year 1959, however, an attempt will be made to take fewer films and survey more intensively the areas of greatest incidence.

Likewise, more attention has been given during the year 1958, and will be given during the year 1959, to the facilities provided for home care by local Chest Clinics. While these clinics are not sponsored by the State Board of Health, the Division of Tuberculosis Control has been able to give help and guidance to local groups in working out such programs, and there are now eight counties being served by Chest Clinics.

#### Division of Venereal Disease Control

Venereal disease morbidity reporting for 1958 continue its upward trend which began in 1954. In 1958 primary and secondary syphilis showed a 35.3 percent increase over 1957, while gonorrhea among teenagers increased 5.22 percent. These figures become even more significant when compared with figures of 1954, the year of lowest venereal disease morbidity since World War II. There was a 313 percent increase in primary and secondary syphilis and a 228 percent increase in gonorrhea by comparison with 1954.

As heretofore, the Venereal Disease Division rendered medical consultation services to private physicians, hospitals and military installations. Direct services and consultation was also rendered to local health departments and to industry. Educational films, literature, and lectures were furnished upon request to various interested professional and non-professional groups.

#### Division of Maternal and Child Health

A variety of services to mothers and children is offered through the Division of Maternal and Child Health, including Maternity Clinics; Well-Child Conferences; Supplies and Instructions for care of Premature Infants in the Home; Midwife Control; Hearing and Vision Screening in the Schools; Child Safety; School Health; Nutrition; Speech and Hearing Evaluation and Speech Therapy; Obstetric Consultation and Education in cooperation with the School of Medicine; Evaluation of Mentally Retarded Children and counselling with their parents; Consultation Service to Local Health Unit personnel, to other Divisions of the Health Department, and to agencies and organizations; lectures before various groups; films; library service; and popular literature on maternal, infant, and child care.

More than 3,000 expectant mothers and 5,000 infants and preschool children are examined each year in clinics and conferences conducted by local physicians, assisted by public health nurses. A trial program of testing for phenylketonuria in infants was begun in two well-child conferences this year. Demonstrations have shown that a low phenylalanine diet is effective in preventing significant mental retardation if started early in infancy.

Incubators with tiny clothing and feeding supplies were loaned to 80 families for care of premature infants in the home. Public health nurses instructed families in carrying for many additional prematures who had had early hospital care, or who did not require incubation.

Active midwives have become fewer each year since the "Rules and Regulations" went into effect in 1952. At present only 393 are practicing, in contrast to 841 in 1951.

This division made arrangements for the teaching of Public Health in the School of Medicine to Sophomore students. Junior students were given 3 half-days field work in Child Health as part of Pediatrics and 4 half-days in visits to Maternity Clinics and home visits with

Public Health Nurses as part of their Obstetrics course. Lectures were given by various staff members to medical, nursing and pharmacy students at the Medical Center and to students in Practical Nursing Schools.

Schools in all counties of the state have had hearing and vision testing programs. These programs are conducted by volunteers under supervision of public health nurses and consultants from this Division. In the last school year, 63,546 children received hearing tests with 1,590 referred for medical attention, and 72,739 received vision tests with 5,369 referred.

The Maternal and Child Health Division has also been active in other areas of school health during 1958. A full time consultant in school health education was added to the staff to work with faculties, parent groups, and teacher training institutions in their school health efforts.

The Petit Jean School Health Workshop for white teachers and health workers and the Hot Springs Health Education Workshop for Negroes are conducted jointly by this division and the State Department of Education. In 1958 the Petit Jean workshop held its eleventh annual session with the total attendance since its beginning close to 2,000. The Hot Springs workshop of 1958 was the ninth annual.

Growing out of the eleven years of effort at Petit Jean is a publication titled, **Handbook for Health Education in Arkansas Schools**. This book has been published with Maternal and Child Health funds and is the official school health publication of the Arkansas State Board of Health and the State Department of Education. As a companion volume the division has prepared a bound reference kit which includes nine outstanding pamphlets on school health. One of these references has been sent to each school building in Arkansas. The handbook is being distributed to teachers and health workers on request.

Being aware of the fact that accidents rate as one of the leading causes of death, the Maternal and Child Health Division has an active home and child safety program. During 1958, the co-operative efforts of the Arkansas State Board of Health, the Arkansas Academy of Pediatrics, and the University of Arkansas Medical Center resulted in the opening of Arkansas' first Poison Control Center. The need for a center was established by the Academy of Pediatrics and with their suggestions and planning the State Board of Health purchased and assembled the necessary library and materials for use in the center. The Poison Control Center was opened in September at the Medical Center and is staffed and supervised by the Department of Pediatrics in connection with the Pediatric Emergency Room. The center offers a 24-hour-a-day information service to the medical and allied professions in Arkansas and emergency treatment to poisoning victims who are referred to the center.

Other accident prevention activities included purchase and distribution of films and literature; talks and demonstrations for various groups

over the state; preparation of exhibits for various state-level meetings; assistance to local health units in program and activity planning; service to schools in the form of literature, curriculum planning, and suggestions for activities; conducting the safety section of the annual Petit Jean School Health Workshop; and participation on the program of the School Safety Section meeting during the 46th annual National Safety Congress in Chicago.

A study of fires and explosions in dwelling and non-dwelling units in Mississippi County was started in 1958 as a co-operative effort of the Arkansas State Board of Health, the Mississippi County Health Unit and the U. S. Public Health Service. An attempt is being made to determine the causes of fires which take the lives of many Arkansas citizens each year. This study will continue until July, 1959, and results will be published. A follow-up program of prevention is being planned which will eventually be undertaken on a state-wide basis.

The Nutrition Service lost two of its part-time nutritionists during the year 1958, the West Memphis worker and the nutritionist from the Little Rock City Health Department. It gained two new nutrition workers, one in the northern part of Arkansas on a district basis and one in Lafayette County. The present staff consists of one senior consultant full-time, a part-time dietary consultant and four part-time nutritionists.

In March, 1958, the dietary consultant planned and conducted an "Institute for Food Service Operators of Small Hospitals". Many workers in small hospitals do not have dietary training. This institute was held to give assistance in improving food service in these hospitals. The Arkansas Hospital Association, State Board of Health, Arkansas Dietetic Association and the University of Arkansas Extension Service sponsored the institute attended by fifty-five persons representing some thirty-nine hospitals. The dietary consultant also conducted two Arkansas Children's Hospital staff training meetings to discuss "Feeding the Ill Child". She is now working on the revision of the Arkansas Diet Manual last revised in 1952.

Physicians and Health Departments were sent a total of 28,380 diets relating to Maternal and Child Health. In addition to these, 14,856 diets have been sent relating to the Chronic Disease program, making a total of 43,236 specific diets distributed during 1958.

Nutritionists have continued their services in midwife training meetings, prenatal conference, well-child conferences and in-service training conferences in their respective areas. A survey of 1,000 pupils has been made for a current picture of Arkansas food habits. A leaflet, "Feeding the Handicapped Child", was prepared and published.

The Hearing and Speech Center saw 260 patients for speech and hearing evaluations and offered a total of 1,353 speech therapy hours. Children, and a smaller number of adults, came from all parts of Arkansas, and there is a wait-



ing list 2 to 3 months long. Two full-time, and one part-time, and three volunteer personnel staff the Center.

A six week's summer course for school-aged children, with group work in speech therapy daily, and meetings for parents once a week, was held during July and August with 45 children enrolled. A class for speech stimulation of children, aged 3 to 5, is held once a week for 2½ hours, beginning in the fall.

The Arkansas Child Development Center, a special project of the Maternal and Child Health Division and supported by a Children's Bureau grant, has been in operation since August, 1957. The Center provides medical, social, and psychological evaluations for children suspected of being mentally retarded, and works with parents, physicians, and community agencies to obtain the best possible arrangements for child and family. Because of a large backlog of applications, the Center will concentrate on seeing children under 7 years of age and will be able to see only a few older children with special problems. In addition to individual evaluations and limited individual counselling, the Center staff is working with parent groups, physicians, schools, and other agencies to stimulate the development of programs and facilities for the retarded.

In calendar year 1958, 466 new applications were received. Of these 413 were accepted for service. 206 children were evaluated in 1958. Of these, 51 were 1-4 years old; 98 were 5-9 years; 46 were 10-14 years; 9 were 15-17 years; 2 were 18-20 years. At the end of 1958, 309 applications were on file as accepted for future service. In 1959, the Center expects to see a greater number of children than in 1958, and expects to gradually decrease the backlog of accepted applications.

#### Division of Heart Disease Control

The combined efforts and close cooperation between this Division, the Arkansas Heart Association, the Department of Cardiology of the University of Arkansas School of Medicine, local medical societies, and certain civic organizations has resulted in further improving public education, physician education, and community services in heart disease control efforts. This Division and the Arkansas Heart Association receive an increasing number of requests for professional men (physicians) to speak to civic and medical groups on the subject of heart disease and blood vessel disease.

The State Health Department has in operation at present two well established diagnostic and treatment heart clinics. The clinics are located in Little Rock and Pine Bluff. The patients seen in these clinics are medically indigent cases and are referred by physicians or local health units. During the past twelve-month period, 950 heart cases were examined and treated in the clinics and more than 8,000 patients seen and examined, while approximately 5,000 electrocardiograms were completed.

Additional clinics are still being planned for Ft. Smith and Hot Springs.

Federal grant-in-aid funds allocated to the State for heart disease control are still being used in part to assist the teaching clinic at the University of Arkansas School of Medicine. The Division continues to provide educational materials; films, pamphlets, etc., on request by authorized agencies, organizations, and individuals.

#### Division of Mental Health

The progressive development of a mental health program, on both a state and local level, rendering needed services to the people of the State is still in the planning and speculative stages. However, several communities are beginning to express keen interest in establishing local outpatient mental hygiene clinics. Interested authorities and voluntary agencies agree that several well located clinics in the State would greatly reduce mental illness in our population and also reduce the patient load of our mental hospital facilities. The lack of adequate funds is the main prohibitive factor in the early establishment of needed clinic facilities.

The Arkansas State Health Department, through the use of grant-in-aid mental health Federal funds, continues to assist the outpatient mental hygiene clinic located at the University of Arkansas School of Medicine by providing salaries of clerical workers assigned to the clinic. The clinic staff interviews referrals or potential cases from all sections of the State.

The Division of Public Health Education of this Department coordinates a wide distribution of films and literature in the field of mental health for public information and education.

It is felt that as the general public becomes better informed as to the actual needs in improving its mental health and preventing mental illness, adequate funds will be provided which will permit the establishment of helpful mental health services.

#### Division of Public Health Nursing

The total number of nurses employed by the State Department of Health at the end of the calendar year is 122. Of these, 4 are in the Central Office; 1 director, 1 generalized consultant, 1 consultant in the mentally retarded program and 1 supervisor in the maternal and child health program. Field personnel are assigned as follows: 5 supervisors, 3 senior public health nurses, and 110 staff nurses. Thirteen (13) counties are without nursing service and 41 counties have only one public health nurse. During the year a total of 27 nursing placements have been made. Twelve nurses have been lost by resignation.

One of the major responsibilities of the Division of Public Health Nursing is the improvement of nursing service given in the local community. In carrying out this responsibility a variety of methods are used. One method is to provide opportunities for the supervisory staff to keep up to date on current procedures and supervision techniques. This enables them to give more adequate supervision to the local public health nurses. Four hundred and eighty supervisory visits were made during the year.

### Division of Dental Health

During the past year, the Division of Dental Health distributed "A Guide for Dental Health Consultants" to the Dental Health Consultants of Arkansas and many other interested parties throughout the country. This booklet has received nation-wide recognition as an outstanding publication for dental public health programs. As a follow-up, the "Directory of Dental Health Consultants" was published and distributed to all Dental Health Consultants, school administrators, and public health nurses.

The Acting Director, prior to July 1, participated in many meetings of both a professional and public health nature, the most important of which was the meeting of the Southern Branch of the American Public Health Association in Little Rock, May, 1958.

A full-time Director for the Division of Dental Health has been employed and his duties began July 1, 1958.

Post-fluoridation surveys were conducted in the cities of Springdale and Jonesboro. The municipal water supplies had been fluoridated some six years. The six-year-old age group of children, or those who had drunk fluoridated water since birth, showed a significant reduction in dental caries. In Springdale, there was a 50 percent reduction of dental caries, and in Jonesboro, a 56 percent reduction.

At the present, there are 31 cities in Arkansas with a population of 296,091 now fluoridating, and two other cities with fluoridation approved and waiting for the installation of equipment.

Many dental health programs have been initiated in the schools during the past year, and it is hoped that dental health education will be expanded tremendously in the state.

### Bureau of Sanitary Engineering

#### Water

Five towns constructed water works systems. This brings the total number of municipal water supplies to 222. Major improvements were made to 50 water systems and 146 sets of plans for improvements were approved by this division.

An inventory of all of the water systems was made for the United States Public Health Service. Chemical analyses data on all of the public water supplies in the state was compiled in a publication which was given wide distribution.

The Annual Water and Sewage Short School was sponsored and actively participated in by this division.

In accordance with Act 333, special qualifying examinations were given to 145 water works operators, and 393 licenses were issued.

Special consultation service was given on many water systems for schools, parks, camps and commercial establishments.

#### Sewage

New sewage treatment plants were constructed at Jacksonville and Benton State Hospital. There are now 131 municipal sewer systems in

the state serving 38 percent of the population.

Major improvements were made by 103 construction contracts and plans were approved for 115 sewerage improvement projects.

#### Swimming Pools

Seventeen new swimming pools were constructed in accordance with approved plans.

The Annual Pool and Beach Association was sponsored and actively participated in by this division.

### Division of Plumbing

Special emphasis for the year has been on promotion of local plumbing programs and education of the local administrators — all with gratifying results. Numerous one-night educational meetings, code reviews, and inspector-plumber schools have been held in all sections of the State. The Division has continued a public information program of speaking before civic groups, associations and women's clubs.

Plumbing inspections of a cross-section of the State indicate an increase in the quality of plumbing installations in Arkansas. These reports also indicate an improvement in overall knowledge and ability of the plumbers. This year there was a very definite upgrading of the quality of knowledge of the local plumbing inspectors.

### Division of Food, Drug and Milk Control

During 1958 the Division of Food, Drug and Milk Control, in cooperation with the local sanitarians, supervised the destruction or disposition of more than a thousand tons of foods which were found to be in violation of the Food, Drug and Cosmetic Act.

As a result of drug investigations made by personnel from this Division three druggists have been called before the State Board of Pharmacy and reprimanded for illegal sale of drugs and exempt narcotics. At the present time legal action is pending against one other druggist for the sale of drugs in violation of the Arkansas Barbiturate and Benzedrine Act.

The Food and Drug Laboratory made 1,721 determinations on 333 samples submitted and as a result of positive determinations legal action was filed against twenty individuals requiring the presence of the analyst in various courts in the state.

Relative to milk control, there have been two new milk laboratories certified in Arkansas by Miss Helen Bowers, State Health Department certifying officer. She participated in two split sampling evaluation series with the U. S. Public Health Service. There were eight milk sheds and plant surveys made during 1958.

### Division of Dairy Products

The Division of Dairy Products is responsible for the administration of all laws and regulations pertaining to the production, processing, manufacturing, and distribution of dairy products other than fluid milk.

Sanitary inspections, laboratory analyses, issuance of licenses, seizure, embargoes, destruction of milk or cream to prevent distribution of



unsatisfactory products, certification of minimum standards, and quality of dairy products for interstate shipment are some of the activities of the Division.

We assume responsibility for those areas which are not served by full-time local health departments and act in a supervisory or advisory capacity to local health departments.

A total of 507 sanitary inspections of dairy product establishments have been made, 867 licenses issued, 38 days spent with local sanitarians, 6,437 cans of milk sediment-tested, 516 cans, or 27,408 pounds, of milk rejected because of sediment, 1,548 samples run for watered milk, 93 cans of milk rejected because of water, 261 butter-fat tests of milk. Various association meetings were attended.

Periodic milk and cream quality surveys were made at cheese factories, milk condenseries, creamery and ice cream plants. Condemnations of milk were made on the basis of sediment, acidity, and evidence of watering; whereas visible mold, extraneous material, taste and smell were used as a basis for condemning cream for butter-making purposes. Several special investigations were made into problems of watered milk arriving at various milk plants.

The inspection and enforcement work of this Division provides the processor, manufacturer, or distributor of dairy products with a higher quality of raw products, requires him to operate his plant in such a manner that a high quality finished product is obtained, and protects him from unscrupulous and unfair competition from other processors, manufacturers, or distributors.

The inspection and enforcement work of this Division provides the consumer of dairy products with more consistent high quality and correctly labeled dairy foods which must meet certain definite standards. These are verified by our sample collection program.

Health departments of today have the knowledge and skill at their command to insure the pro-

duction and distribution of safe and high quality milk and milk products.

#### Arkansas Water Pollution Control Commission

The Commission staff completed surveys of 5 stream basins covering 91½ square miles and initiated surveys of 3 stream basins covering 1,044 square miles. Stream and waste samples collected during these surveys totaled 1,404; and 10,778 chemical analyses were made on the collected samples.

Five public hearings were held on the completed basin surveys and 4 abatement orders were issued as a result of the surveys and hearings.

The Commission issued 4 permits for industrial waste treatment plants and nine permits for municipal waste treatment plants.

As administering agency for the federal sewage treatment works construction grant program, the Commission processed \$1,271,660.85 of grant funds which were allocated to 22 cities having projects with a total construction cost of \$5,768, 313.91.

#### Bureau of Laboratories

The Bureau of Laboratories had a very full year in 1958. A staff of thirteen technical, six clerical and five service personnel received, examined and reported 342,452 examinations (up 7 percent) on 199,711 specimens (up 8 percent). The Chemistry division now keeps a continuous check on radio-activity in the air and rainfall.

In the Microbiology division it was noted that 144 positive cultures for diphtheria were obtained as compared to no positive cultures last year.

The Syphilis Serology division reported that approximately 4 percent of the more than 160,000 bloods tested were sero-reactive with at least one test.

Approximately one hundred private laboratories are now approved by the Arkansas State Board of Health for performance of premarital blood tests for syphilis. The reactivity rate on premarital blood tests is 1.4 percent.

## WOMAN'S AUXILIARY TO THE ARKANSAS MEDICAL SOCIETY 35th ANNUAL SESSION

Fort Smith, Arkansas

April 13 & 14, 1959

Auxiliary Headquarters at the Ward Hotel

#### Monday, April 13th:

- 8:00 Pre-Convention Board Meet at Breakfast
- 9:00 Registration on the Mezzanine
- 10:00 Opening General Session—Reports of Officers and Committee Chairmen
- 1:30 Luncheon in Gold Room of Ward Hotel  
Poet Laureate—Mrs. George Fletcher  
Principal Speaker—Mrs. Frank Gastineau  
President-Elect of the Woman's Auxiliary to the American Medical Association
- Night Life: Cocktail Supper at the Hardscrabble Country Club

#### Tuesday, April 14th:

- 8:00 Past Presidents' Breakfast

#### 9:30 General Session

- Election of Officers
- Reports of County Presidents
- 11:30 Memorial Service—Jointly with the Medical Society—Goldman Hotel
- 1:00 Luncheon at Hardscrabble Country Club  
Principal Speaker: Mrs. George Owen,  
President of Southern Medical Auxiliary
- Installation of new officers
- Post convention Board Meeting immediately following luncheon
- 4:00 Tour of Sparks Manor
- Night Life: Banquet and Dance

## Minutes — Special Meeting

### HOUSE OF DELEGATES, ARKANSAS MEDICAL SOCIETY

Sunday, November 23rd, 1958, Hotel Marion, Little Rock, Arkansas

President Hundley called the House to order at 1:00 p.m. and announced that the purpose of the meeting was to consider matters of legislation which would come before the Arkansas Assembly during its 1959 meeting. Dr. Hundley turned the meeting over to the Speaker of the House, C. Lewis Hyatt of Monticello.

Dr. Hyatt then introduced Dr. Dale Alford, newly elected member of Congress from the Fifth District, who spoke briefly saying that he hoped to have the good wishes and advice of all physicians, including those who opposed his election. He said that he hoped that Arkansas and Arkansas physicians would be proud of his record in Congress.

At the request of the Speaker, Mr. Schaefer called the roll and the following delegates and members seated as delegates were present:

Arkansas, T. S. Van Duyn; Ashley, L. E. Edwards; Baxter, E. M. Gray; Benton, K. A. Siler; Boone, Hugh M. Fogo; Columbia, Joe F. Rushton; Conway, Harold E. Hyder; Craighead-Poinsett, Horace C. Barnett, Bascom P. Raney, Joe Verser; Cross-St. Francis, K. E. Beaton; Desha, H. T. Smith; Drew, C. Lewis Hyatt; Faulkner, C. A. Archer, Jr.; Garland, Frank Burton, Martin Eisele; Hempstead, J. W. Branch; Hot Spring, C. R. Ellis; Independence, J. J. Monfort; Jackson, Jabez Jackson; Jefferson, S. C. Monroe, Charles W. Reid; Lafayette, Charles Cross; Lonoke, J. A. Martin; Miller, Gerald Teasley; Ouachita, Henry Hearnberger; Polk, David O. Hefner; Pulaski, John Downs, Edgar Easley, G. T. Jansen, Bill Dave Stewart, Alfred Kahn, Jr., J. A. Harrell, Robert L. Henry, S. Wm. Ross, John Riggins, J. Shuffield, Douglas Lawrason, W. A. Snodgrass, Jr.; Searcy, H. J. Hall; Sebastian, W. R. Brooksher, Art B. Martin, L. A. Whittaker; Sevier, R. B. Dickinson; Union, George Burton, G. D. Murphy, Jr.; Washington, Stanley Applegate, H. W. Ward; Woodruff, Fay B. Mill-

wee; Councilors Hugh Edwards, H. W. Thomas, Perry Dalton, John Wood, Robert Jones, Ross Fowler, President Louis K. Hundley, President Elect James M. Kolb; secretary Elvin Shuffield; past presidents T. D. Brown, R. C. Dickinson, R. B. Robins, Fount Richardson, Euclid Smith, Charles Henry, and O. J. T. Johnson.

Speaker Hyatt then introduced the Chairman of the Legislative Committee, Elvin Shuffield, who spoke on the dangers of complacency among physicians regarding anticipated efforts of the osteopaths to obtain full surgical and medical privileges in Arkansas.

Dr. Shuffield then introduced Mr. Lawrence Blackwell, who has been employed as the Society's Legislative representative. Mr. Blackwell spoke briefly expressing the necessity for starting to work on State Legislators now rather than waiting until the Assembly convenes.

Dr. Shuffield then introduced Mr. Eugene Warren who urged the members of the House to look at the situation with regard to the osteopaths realistically and to take immediate action to combat the propaganda campaign being carried on by their organization.

After discussion by Dr. W. Myers Smith and upon the motion of Kolb and Easley, the House voted to instruct the Legislative Committee to help the State Board of Health obtain its budget requirements. Herron advised the House that it had been proposed that other professions be represented on the State Board of Health.

Verser spoke regarding the difficulty the Physical Therapists had trying to operate a separate board. He requested and the House voted, upon the motion of Wood and Kolb, to work for a law which will allow the State Medical Board to absorb the Physical Therapists Board.

Dr. Van Duyn nominated Dr. K. E.



Beaton of Wynne for vice councilor to fill the unexpired term of Dr. Millwee. Upon motion of Kolb and Wood, Dr. Beaton was elected by acclamation.

Charles Henry discussed the Boggs Report on the Operation of the University of Arkansas Medical Center. Upon the motion of Thomas and Whittaker, the House

voted to instruct the president to appoint a committee to study the report and make recommendations to the Executive Committee of the Society for immediate action.

The House adjourned at 3:30 p.m.

Approved: C. Lewis Hyatt, Speaker of the House.



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## BOOK REVIEWS

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**POISONING.** W. F. von Oettingen. W. B. Saunders Co. Philadelphia—London. Pp. 627. 1958.

Death and disability from poisoning is a tragic and ever increasing threat in a civilization oriented toward scientific progress in the field of chemistry. A wider understanding of the possibility of poisoning by both old and new drugs is certainly desirable. Many pediatric deaths occur from poisoning. Von Oettingen's textbook on poisoning is a systematically organized guide to the diagnosis and treatment of many chemical substances which are capable of injuring the body. Because of the exceedingly large number of drugs, the discussion of each is rather short. However, the author has made a very commendable attempt to expand the more frequently encountered poisons. This text is very thorough considering that it is only 627 pages long. Some book on poisoning is recommended for the library of every physician and this text is ably written and should fill such a niche for any physician. AKJ

**SCHIZOPHRENIA.** Manfred Sakel, M.D. Philosophical Library. New York. Pp. 334. 1958. \$5.00.

This is an authoritative book on schizophrenia written by one of the outstanding investigators in the field of mental disease. The book is well written and quite easy to read. The book goes into

etiology, method of examination, symptomatology, pathology and therapy of schizophrenia. The chapter on the discovery and developing of insulin therapy is particularly fascinating. Sakel pioneered this field. Also of great interest to physicians outside of the field of neuro-psychiatry is a chapter on indications of shock. This book is heartily recommended to all physicians as being authoritative and easily read.

**ORTHOPEDIC DISEASES.** Ernest Aegerter and John A. Kirkpatrick, Jr. W. B. Saunders Company. Philadelphia. London. Pp. 602. 1958.

This interesting book makes very little effort to stress the mechanical therapy of reduction of fractures nor does it stress the surgical approach to bone disease. It is intended to set forth the physiology, pathology and radiology of diseases of bones. It is extremely well illustrated and interestingly written. In the preface, the author states that there is no new material in the book and this is probably so; however, the format of the book tends to be different from any in its field. The references in this book are somewhat limited and because of a desire to keep the book within textbook length rather than an encyclopedia, some chapters are necessarily quite short. The section on bone tumors is extremely interesting. There is an adequate discussion of metabolic bone diseases, and yet the reviewer would like to have seen this portion expanded. This book is recommended as a text on diseases on bone in which surgical therapy is not stressed. AKJ

# Medicine in the News

## Nursing Home Association Appeals For Loan Guarantees

At the first health hearing of the year, Jan. 22, George T. Mustin, representing the American Nursing Home Association, urged passage of an amendment to the housing act that would authorize Federal guarantee of mortgages for proprietary nursing homes. The hearing was before the Housing Subcommittee of the Senate Banking and Currency Committee. He made these points:

1. Proprietary homes now care for "the vast majority" of nursing home cases, and there is no prospect that this situation will change. Usual community lending institutions are reluctant to make satisfactory loans on the homes, because of their "one purpose" design.

2. Nursing homes that meet realistic standards, and have proper medical and nursing arrangements, "serve hundreds of thousands of elderly patients who otherwise would be forced to enter general hospitals and pay the relatively high prices hospitals are forced to charge."

## Administration Budget Calls For \$3.1 Billion for HEW

The House Appropriations subcommittee headed by Rep. John Fogarty (D., R.I.) planned to get down to the business of hearings on the fiscal 1960 budget of the Department of Health, Education, and Welfare by mid-February. Traditionally hearings come first on the Labor Department budget. Following custom, the House hearings are closed. Later the Senate holds open hearings. President Eisenhower, determined to balance the budget and to keep spending within bounds, asked Congress Jan. 19 for \$3,176,000,000 to run HEW, which would be 1.6 per cent below the estimated spending for the current fiscal year. Despite the economy emphasis, the President's request is about 12 per cent above what he asked a year ago.

## Democrats Will Take Over More House Committee Posts

Under an agreement reached by Speaker Rayburn and Minority Leader Halleck, the Democrats will take over more posts in most House committees, as a result of their substantially increased majority. In general, the ratio will be about 6.5 Democrats to 3.5 Republicans, but in some cases Republicans will have a slightly higher ratio as a personal courtesy to members who want to stay on the committee.

## From Illinois Medical Society Bulletin: 1959 Dues Are Due

Dues for membership in county, state and A.M.A. should be paid to each county medical society secretary during the month of January. You pay once — at the county level — your county society secretary sends your state and A.M.A. dues to the state office, records are marked and AMA dues forwarded.

Dues in the Illinois State Medical Society have not been raised since May of 1952. Try to name something else that hasn't gone up materially. The \$40.00 state medical society dues include:

A.M.E.F. allocation	\$20.00
Benevolence Fund	2.00
Society funds	18.00
	<hr/>
	\$40.00

Many other medical societies have found it necessary to increase dues materially (and the I.S.M.S. may have to consider similar action in the near future). You might be interested in 1958 dues paid in various states throughout the country:

Arizona — \$70 with \$10 for AMEF
Colorado — \$60
Iowa — \$85 with \$10 for student loan fund until 1960
Michigan — \$60 — \$10 for new building
Nevada — \$100
North Dakota — \$75
Oregon — \$50
Texas — \$50 — \$15 for new building
South Dakota — \$75
Vermont — \$45
California — \$50 with \$10 for AMEF
District of Columbia — \$50
Maine — \$55



Mississippi — \$50  
 New Mexico — \$70  
 Oklahoma — \$42  
 Rhode Island — \$50 after 1st year in practice. \$25 first year  
 Utah — \$140 — \$20 for AMEF  
 Wisconsin — \$75

To the above amounts must be added \$25 for A.M.A. membership and whatever dues are assessed at the county medical society level. Some county societies have dues which are higher than those assessed for state and national affiliation.

### State Totals Show Dramatic Increases

Listed below are comparative figures for AMEF contributions by states for 1957-1958. A quick glance at the base of each column gives the over-all result: a total dollar increase of \$148,000.

Beyond the general increase however, are to be found several points of interest. In all, 35 states showed increases over a year ago — from the \$9.06 of Nebraska to the top jumps of \$30,691 and \$31,349 of Indiana and New Jersey, respectively. Of the 14 states reporting drops for 1958, most of the decreases were small. Arkansas, down only \$1.50 from 1957, just missed the plus column.

First figure is 1957 totals, second figure is 1958 total: Alabama, \$6,599.00, \$8,387.16; Alaska, \$125.00, \$1,414.50; Arizona \$9,113.00, \$12,638.97; Arkansas \$2,046.00, \$2,044.50; California \$165,105.00, \$171,611.20; Colorado \$23,997.00, \$21,326.70; Connecticut \$15,362.00, \$16,271.53; Delaware \$3,004.00, \$5,359.55; Dist. of Columbia \$7,156.00, \$11,412.50; Florida, \$6,460.00, \$6,978.15; Georgia \$3,586.00, \$4,494.60; Idaho, \$886.00; \$3,031.45; Illinois, \$199,257.00, \$200,191.59; Indiana, \$19,568.00, \$50,259.97; Iowa \$7,841.00, \$6,220.00; Kansas, \$15,128.00, \$15,251.22; Kentucky, \$1,540.00, \$2,425.68; Louisiana, \$2,316.00, \$3,725.87;

Maine, \$823.00, \$1,232.75; Maryland, \$4,604.00, \$7,316.50; Massachusetts, \$5,419.00, \$7,767.91; Michigan, \$9,621.00, \$10,974.83; Minnesota, \$36,846.00, \$33,297.50; Mississippi, \$2,227.00, \$3,033.36; Missouri, \$9,127.00, \$8,049.14; Montana,

\$3,740.00, \$4,259.46; Nebraska, \$9,497.00, \$9,506.06; Nevada, \$5,563.00, \$7,055.34; New Hampshire, \$2,991.00, \$2,635.06; New Jersey, \$17,348.00, \$48,697.16; New Mexico, \$6,043.00, \$7,446.00; New York, \$42,511.00, \$49,636.39; North Carolina, \$5,690.00, \$5,338.89; North Dakota, \$2,549.00, \$4,080.00; Ohio, \$33,142.00, \$41,651.20; Oklahoma, \$1,458.00, \$1,602.50; Oregon, \$10,641.00, \$6,539.00; Pennsylvania, \$64,764.00, \$63,699.70; Rhode Island, \$462.00, \$892.00; South Carolina, \$14,267.00, \$40,149.36; South Dakota, \$8,647.00, \$6,615.00; Tennessee, \$7,719.00, \$6,916.19; Texas, \$29,717.00, \$44,013.90; Utah, \$11,041.00, \$11,064.75; Vermont, \$2,186.00, \$2,507.00; Virginia, \$7,209.00, \$8,875.50; Washington, \$9,116.00, \$11,239.03; West Virginia, \$5,881.00, \$7,735.04; Wisconsin, \$8,687.00, \$8,611.23; Wyoming, \$3,491.00, \$2,671.32; Hawaii, \$2,483.00, \$1,767.48; Puerto Rico, \$45.00, \$33.00; Foreign, \$0.00, \$90.00; A.M.A., \$100,000.00, \$100,000.00; Interest \$10,239.00, \$13,608.89.

TOTAL, \$984,884.00, \$1,133,653.58.

### 14th Rural Health Conference

Chicago — Mental health, aging, nutrition, dental health, costs of medical care, and health insurance — and their effect on rural residents — were highlighted at the 14th National Conference on Rural Health, March 5-7, in Wichita, Kan.

The conference, sponsored by the American Medical Association's Council on Rural Health, had as its theme, "Horizons in Rural Health."

### Medical Officers Needed For Federal Civilian Posts

The Federal government is looking for physicians who would like to make a career in civilian medicine in government. The recruiting is being done by the Civil Service Commission which promises "challenging work and interesting assignments." Doctors are designated "medical officers" although they do not serve in uniform. They are eligible for civil service grades from GS-11 to GS-15, with salary ranges from \$7,510 to \$12,770.

## **Color Additives Bill To Be Pushed By Administration**

The administration is prepared to press in this Congress for legislation to regulate use of coal-tar colors in foods, drugs and cosmetics. Health, Education, and Welfare officials want to place upon the users of these colors the responsibility of proving to the satisfaction of Food and Drug Administration that the coloring materials are safe in the amounts proposed — not unlike the food additives law passed by Congress last year.

## **President Plans Committee to Set Health and Other Goals**

President Eisenhower plans to name a committee of educators and representatives of the professions, labor, management, finance "and every other kind of useful activity" to set long-range goals for the country. The President announced his intentions in his State of the Union Message, delivered to Congress Jan. 9. He said the committee would be concerned with living standards of the people, their health and education, better assurance of life and liberty and their greater opportunities. It will also attempt to point out methods to meet such goals, and to indicate what levels of government — local, state or Federal — should have responsibility.

## **American Scientists Dispute UN Report on Radiation-Leukemia**

A committee of American scientists is disputing some of the conclusions of a United Nations study group on the effects of radiation on human life, particularly objecting to the close association the UN report indicated exists between radiation and leukemia.

The American committee is functioning under the National Academy of Sciences—National Research Council. Its chairman is Dr. Shields Warren, professor of pathology at Harvard, director of the New England Deaconess Hospital in Boston, and formerly chief medical officer of the Atomic Energy Commission. Members are all prominent in atomic medicine. The U. S. committee's formal report was in reply to the conclusions of a

UN scientific committee on the effects of atomic radiation, published a few months ago.

Dr. Warren's committee, while praising the UN group for the scope and intensity of its study, raises these arguments, among others:

1. The UN report emphasized the indicated connection between radiation and leukemia. Comments the U. S. committee — "Our committee inclines to the view that many forms of cancer, including leukemia, arise through a more or less complex series of responses. While somatic mutations may be included among these, it seems doubtful that a strict linearity analogous to that seen in the genetic effects of radiation is likely to hold in the case of these conditions . . . Large-scale definitive experiments and demographic observations are needed . . ."

2. The U. S. group is uncertain of UN statistics on the incidence of radiation-induced leukemia. "We recognize that the tabulations given by the (UN) committee present estimates which range from zero to some thousands of cases and hence imply much uncertainty. We are concerned that greater validity may be ascribed to these figures than the basic data warrant."

## **Cardiograms to Be Required of Commercial Pilots in Command**

Pilots in command of commercial airlines on scheduled routes will be required after July 1 to include electrocardiograms in their physicals. Civil Aeronautics Board said this was being done "to eliminate a potential hazard by identifying otherwise undetected cases of myocardial infarction." The new rule does not apply to co-pilots. Command pilots between age 35 and 40, on the first examination following age 35, will have to show by cardiogram absence of infarction. Those 40 or older will have to take tests annually.

## **U.S., Industry Agree on Exhaust Research**

The U. S. Public Health Service and the automobile industry have reached an agreement to work closely in research on



the exhaust fume problem. PHS will concentrate on health aspects. The industry will center its efforts on trying to develop devices to reduce fumes from exhausts. Auto exhausts came in for a major share of blame for air pollution at the recent National Conference on Air Pollution.

### **Flu Vaccinations Urged for Heart, Blood Disease Patients**

U. S. Public Health Service and American Heart Association are jointly urging persons with heart and blood vessel disease to be vaccinated against influenza. An appeal by the two groups says in part:

"Experience has shown that patients with heart or lung diseases are more susceptible to the hazards of influenza than is the general population. This increased risk is shown by more severe illness and by higher case fatality rates among patients with these diseases. Patients with, or prone to, pulmonary congestion secondary to heart disease are an especially high risk group.

"Studies with influenza vaccine have clearly shown that its use significantly reduces the incidence and probably the severity of influenzal infection, in the presence of local or widespread epidemics. Furthermore, use of the vaccine is contraindicated only in those patients who are allergic to the components of the vaccine. The type of local and systemic reactions to vaccine have not been such as to constitute any significant hazard to patients with cardiac disease."

### **National Directory of Blood Banks Issued by Joint Council**

The Joint Blood Council has just compiled and released the country's first comprehensive directory of blood facilities, which presents in tabular form all conceivable information about banks that could be helpful to physicians, hospitals and others interested in blood and its derivatives.

A detailed questionnaire sent to all known blood banks, hospitals and clinics that operate blood-handling services produced the mass of information on which the report is based. Detailed information

for all units covers approvals and services, classification of institution and type of ownership, system or systems for collecting blood, type of supervision and other factors.

Questionnaires were sent to 3,150 institutions, and 2,202 replied. Those that failed to respond will have an opportunity to be listed in future revisions of the directory. Facilities that participated in the survey are receiving free copies of the report. Copies also are available at \$1.50 at the Joint Blood Council headquarters, 1832 M Street, N. W., Washington 6, D. C. The council is composed of American Medical Association, American Association of Blood Banks, American Hospital Association, American National Red Cross and American Society of Clinical Pathologists.

### **Milk Radioactivity Increases, But Not at Dangerous Rate**

Public Health Service, announcing an increase in the radioactivity level in milk, at the same time reassured the public that the amount still is "well below" the danger point. Samples were taken in September, but complicated testing delayed release of the results until now. PHS also said the increases "generally were within the range of recent month-to-month fluctuations in radiation levels among the different sampling stations."

### **The Month in Washington**

Washington, D. C. — Since the release last summer of the much-discussed Bayne-Jones report on medical education and research, the administration has been reviewing the situation and the possible need for Congressional action on federal aid to the country's medical schools.

Just how strong is its case is likely to be determined in the session of the 86th Congress now underway. In the closing phases of the 85th Congress, a health subcommittee of the House took up the subject amid a feeling at that time that proponents had failed to achieve a sense of urgency.

Another year has rolled around, and the climate may be different. The Bayne-Jones report revived the medical school

aid issue. Not since the six-year-old report from the Magnuson Commission has a medical report been quoted so extensively. The Bayne-Jones report calls for a doubling of medical research spending by 1970 and the immediate start on at least 14 new medical schools.

Secretary Flemming of Health, Education, and Welfare let it be known soon after taking office last summer that he was not going to allow the report to be "put on the shelf to gather dust."

In an address to the American College of Surgeons, Surgeon General Leroy Burney sketched briefly a plan for another consultants' group not unlike the Bayne-Jones committee. It is now looking into the question of need for more physicians in the next decade. No date has been set for the final report. At its first meeting in December, the committee authorized two staff studies to get underway; on construction costs of newer schools and on the financing of present-day medical school operations.

### Summary of Expected Health Legislation

**Social Security.** In and out of government, interest continues to build up in problems of the aged, including payment for their hospital-medical care. Last year hearings were held on proposals (Forand bill) for financing hospital-surgical care of all social security beneficiaries, but the bill was not reported out of the House committee. It is conceded that the question will come up again in this Congress.

**Research Abroad.** A number of Congressional leaders, including Senators Hubert Humphrey (D., Minn.) and Lister Hill, (D., Ala.), are interested in having the U. S. stimulate more worldwide interest in medical research. Some of the proposals include an international medical year, more U. S. grants to foreign medical researchers, and an international medical research foundation, which would cooperate with World Health Organization. Discussion on many of these ideas is expected.

**Aid to Medical Schools.** For several months high officials of the Department

of Health, Education, and Welfare have been discussing in public the problems of medical schools, particularly their finances. Recently Surgeon General Burney of Public Health Service appointed a committee to look into the medical school situation, and report back to him with recommendations as to the proper role of Federal, state and local governments and private enterprise in supporting the schools. Legislation on the subject was before the last Congress, and is certain to be re-introduced in this session. One of the issues is whether U. S. grants should be used to meet ordinary operating expenses of the schools, or only for construction and equipment.

**Doctor Draft Extension.** The draft act, with its amendment for calling up physicians under age 35, is scheduled to expire next June 30. Congress will likely be asked by Defense Department to extend the regular draft and the physician amendment. Defense Department expects it will have to use the doctor draft, which hasn't been invoked in two years, to produce the physicians it will need this year.

**Keogh Pension Bill.** Efforts for passage of the Keogh bill, led by the American Thrift Assembly, will be renewed with the 86th Congress. This legislation would grant the self-employed a tax status similar to that of corporation employees by allowing them to defer income tax payments on earnings placed in retirement plans. The bill easily passed the House last session but lost out in the Senate.

**Medicare.** Prospects are that the \$72 million appropriated by Congress for the military dependents' medical care program will be exhausted before the end of the fiscal year, June 30. If so, the Defense Department likely will go before Congress and ask for a deficiency appropriation. This could open the door to discussion of the restrictions placed on Medicare by the last Congress. Principal irritant is the requirement that many service families receive their medical care at military facilities, rather than from private hospitals and private physicians. Also, an advisory committee has proposed



that a modified program of dental care be incorporated in Medicare.

**Budget to Ask Same Amount for Research.** The Eisenhower budget for the next fiscal year will ask approximately the same amount for research at the National Institutes of Health as they have for the current year — \$294 million. Secretary Flemming of HEW disclosed this at a news conference in which he talked mostly in general terms about the budget. He said total expenditures (new and carry-over funds) will be higher than in any other year.

### **MD's (& Plumbers) Riled By Revenuers' Tax Check**

Current issue of a tabloid newspaper circulated free among physicians says this city is in midst of "the most intensive door-to-door hunt for medical tax evaders in the Capital's history." But the fact is simply that a routine canvass by the Baltimore district office of Internal Revenue Service is in progress. It is covering architects, liquor dealers and other self-employed, along with doctors.

"Yes, we've heard about complaints from physicians," said a spokesman of IRS, "but there have been as many complaints by plumbers." He explained that an agent will cover all businesses or professional offices in an assigned block. If a large medical building is in that block, a good many physicians and dentists are going to be canvassed. —From: Washington Report on the Medical Sciences

### **AFL-CIO Group Drafts Plan for U. S. Employee Health Insurance**

Action has been started pointing toward enactment, possibly this session, of legislation to set up a voluntary, contributory health insurance program for U. S. civilian workers. Bills have been introduced in both Senate and House and referred to the two Post Office and Civil Service Committees.

A new effort is being made by organized labor for enactment of a Federal employee health insurance program, an issue that has been before Congress for many years but that has never been resolved because the interests involved have

not been able to agree. In general, the attitude of the Congress has been to take no action in view of disagreement among those who would benefit and the organizations that would have to administer a program.

The AFL-CIO Government Employees' Council, representing about half a million U. S. workers, is proposing the following:

1. Coverage would be open to all Federal workers and their families and would continue in retirement provided the individual maintained his premium payments.
2. The U. S. would pay for two-thirds of basic insurance, up to a maximum contribution of \$14 per month; the employee would pay the other third, and could obtain broader protection by paying the extra cost himself.
3. Employees would have a choice of basic insurance — commercial, Blue Cross & Blue Shield, employee union plans, etc., within certain limits.
4. The U. S. would meet the entire cost of catastrophic insurance, but to take advantage of this, the employee would have to have basic coverage. Depending on his income, the employee would have to pay between \$100 and \$300 after basic benefits ran out until catastrophic benefits began.
5. Catastrophic coverage would meet 75 per cent of the costs, once it came into operation.

### **Six State Societies and AMA Present Checks at Minneapolis Meeting**

At a brief ceremony during the opening session of the house of delegates at the Minneapolis clinical meeting, AMEF received checks totaling \$248,658.75.

Receiving the checks for the Foundation was Board president, Dr. George F. Lull. Largest gift was from California, presented to Dr. Lull by Dr. Donald Cass of Los Angeles, chairman of his state's delegation. The check for \$150,305.75 represented a gift from every California physician.

Dr. Kenneth L. Olson, president of the Indiana Medical Association, delivered a check for \$35,110, representing doctors'

initial gifts from Indiana's recently inaugurated dues increase plan.

Other gifts included \$19,608 from New York presented by Dr. Leo E. Gibson of Syracuse, president of the Medical Society of the State of New York; \$25,000 from New Jersey, presented by Dr. William F. Costello of Dover, chairman of the New Jersey delegation; \$9,977.50 from Utah presented by Dr. Kenneth B. Castleton of Salt Lake City, and \$8,657.50 from Arizona, presented by Dr. Jesse D. Hamer of Phoenix.

Dr. Lull noted the outstanding record of several of the states. "Three of the North Central states," he said, "have particularly distinguished themselves. Our host state, Minnesota, and North and South Dakota consistently have raised a high per capita gift. In some cases per capita contributions have even surpassed those of the dues increase states. Their voluntary campaigns provide a model of successful fund raising for medical education."

During the final session of the House of Delegates meeting in Minneapolis, it was announced that the AMA Board of Trustees had voted to give \$100,000 to AMEF. The contribution brought the total received at the 12th annual Clinical Meeting to \$348,000.

### Health Insurance

Health insurance in the United States expanded on many levels in 1958 to continue the steady growth it has maintained for the last 20 years, the Health Insurance Institute reported today.

Despite the general adjustment that took place in the national economy, a new record was reached when an estimated \$4.8 billion in health care benefits were paid by all insuring organizations during 1958 to help the public meet the cost of accident and sickness. This surpassed the 1957 benefit payment figure of \$4.2 billion by more than 14 per cent, the Institute noted.

### Medical Education Congress

CHICAGO — Specialism in medicine and the role of research in medical education were the main discussion topics

during the 55th annual Congress on Medical Education and Licensure Feb. 7-10 in Chicago.

The congress is sponsored by the American Medical Association's Council on Medical Education and Hospitals, the Advisory Board for Medical Specialties, and the Federation of State Medical Boards of the United States. It was held at the Palmer House and was attended by 1,000 medical educators, hospital administrators, government officials, and others interested in medical education.

"The rising prevalence of specialism in medicine is associated with many problems in education and in the way medicine is practiced," Dr. Edward L. Turner, secretary of the A.M.A. council, said. "It is being discussed at the meeting with the hope of clarifying some of the problems and finding new approaches to education and training in both specialism and general practice."

During a plenary session Sunday morning, Feb. 8, the general areas of discussion were outlined, including specialism in modern society; specialism in medicine; trends in specialism, and the relation of specialism to "the pursuit of excellence."

### New Secretary of Arkansas Hospital Association

Mr. Graham T. Nixon of Conway, Arkansas, has been named Executive Secretary of the Arkansas Hospital Association. Mr. Nixon is a native of Jacksonville, Arkansas, and was formerly Director of Public Relations at Arkansas State Teachers College.

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## ANNOUNCEMENTS

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### Oklahoma State Medical Association 53rd Annual Meeting

Members of the Arkansas Medical Society have been extended an invitation to attend the 53rd Annual Meeting of the Oklahoma State Medical Association at the Mayo Hotel in Tulsa, Oklahoma, April 20, 21 and 22. There will be no registration fee.



## FEATURES

The meetings will begin at noon on Friday in each instance and will continue through 4:30 p.m. on Saturday. Members of both the legal and medical profession are invited.

The program will include discussions of Medical and Legal Problems Involved in Narcotic Addiction, Traumatic Neurosis, The Approach of Medicine and the Law to Contingent Fees, Res Ipsa Loquitur in Professional Liability Cases, Impartial Medical Testimony, and the Classic Method of Cross Examining an Expert Medical Witness.

### **International Congress On Occupational Health**

The 13th International Congress on Occupational Health — first to be held in the Western Hemisphere — will meet in New York City, July 25 to 29, 1960, according to an announcement by Dr. Leo Wade, of New York, who is chairman of the Organizing Committee. The Scientific Program Committee has invited submission of papers on various aspects of Occupational Health for presentation at the Congress.

### **XIIIth General Assembly of World Med. Assoc. Program Plans**

The Canadian Medical Association will be host to the XIIIth General Assembly to be convened in Montreal, Canada, September 7-12, 1959.

### **American College of Obstetricians and Gynecologists to Hold Annual Meeting April 6-8**

The American College of Obstetricians and Gynecologists will hold its annual meeting in Atlantic City, April 6-8, with general sessions in Convention Hall. An attendance of about 2,000 physicians is anticipated.

### **Second Symposium on Gnotobiotic Technology; the Rearing and Use Of Germfree Animals**

A national symposium on the technology of germfree research will be held Wednesday and Thursday, April 8 and 9, 1959, at Lobund Institute, University of Notre Dame, South Bend, Ind., accord-

ing to an announcement made by the chairman of the symposium, Professor Philip C. Trexler, of Lobund Institute.

### **Awards for Manuscripts on Obstetrics and Gynecology**

The Division of Obstetrics and Gynecology of the International College of Surgeons announced its second annual competition for two awards for the best manuscripts on a phase of obstetrics and gynecology. The first award will be \$500 and the second \$300.

The contest is limited to (1) interns, residents, or graduate students in obstetrics and gynecology, or (2) to those engaged in the practice or teaching of the specialty. Contestants must hold a degree of medicine from an accredited college of medicine. Fellows of the International College of Surgeons are not eligible.

Manuscripts of not more than 5,000 words must be submitted on or before June 1, 1959, to Dr. Harvey A. Gollin, secretary of the prize committee, 55 East Washington Street, Chicago 2.

### **Southwestern Surgical Congress**

The annual meeting of the Southwestern Surgical Congress will be held at the Brown Palace Hotel, Denver, Colorado, on March 30, 31, April 1 and 2. In addition to the regular program, Dr. Henry Swan, Head of the Department of Surgery, University of Colorado Medical Center, will conduct a series of clinics on April 3 for those interested.

### **Six Ophthalmology Residency Fellowships Are Announced**

Six additional Fellowships for Residents in Ophthalmology, to be awarded July 1st, 1959, have been announced by the Guild of Prescription Opticians of America, Inc., through its President, E. S. Hirsch, of Miami, Florida. Applications for these Fellowships must be received by May 15, 1959.

Each Fellowship is for a total of \$1,800, payable in monthly stipends over the period of a three-year Residency. The grants are limited to Residencies at approved institutions where full three-year

Residencies are offered, but residencies which begin anytime during the calendar year are eligible. Application forms and covering information are available by writing to FELLOWSHIPS, Guild of Prescription Opticians of America, Inc., 110 East 23rd Street, New York 10, N.Y.

## NEW MEMBERS

Doctor Ernest L. Burnell has been accepted for membership in the Ouachita County Medical Society. A native of Camden, Arkansas, Dr. Burnell received his preliminary education at Morehouse College, Atlanta, Georgia, and was graduated from the University of Arkansas School of Medicine in 1957. He completed his internship at Pontiac General Hospital, Pontiac, Michigan in June 19, 1958, and has opened his office at 621-A, Adams Avenue, S. E., in Camden.

Doctor Albert W. Lazenby has been accepted for membership in the Desha County Medical Society. A native of Danville, Arkansas, Dr. Lazenby completed his preliminary education at the University of Arkansas School of Medicine in 1955. His internship at the University Hospital, Little Rock, was completed in June, 1956, and he entered the U. S. Navy for two years' service in August, 1956. Dr. Lazenby is a general practitioner with his office in Dumas, Arkansas.

A new member of the Hempstead County Medical Society is Dr. Forney G. Holt, 420 E. 2nd, Hope, Arkansas. Dr. Holt was born in Bingen, Arkansas and received his preliminary education at the University of Arkansas at Fayetteville. His M.D. Degree was received from the University of Arkansas School of Medicine at Little Rock in 1957. After serving an internship at the Arkansas Baptist Hospital, Little Rock, Arkansas, Dr. Holt entered General Practice at the above mentioned address.

## Obituary

Dr. Noah Edward Fraser, 78, who observed his golden anniversary as a practicing physician in 1958, died in Memorial Hospital at Conway on December 21, 1958, after an illness of two weeks. Dr. Fraser was born at Union Hill, Independence County, and was graduated in 1908 from University of Tennessee School of Medicine in Memphis. He was a past president of the Faulkner County Medical Society and was a member of the staff of Memorial Hospital. He was a member of the Arkansas Medical Society. He was a Baptist, and formerly served as a deacon in First Baptist Church at Conway.

Survivors are a son, Eugene E. Fraser, Conway, six grandchildren and one great-grandchild. His wife, the former Maud E. Capps, died in 1947.

Dr. Thomas Trigg Ross, 60, Clark County Health Officer, died December 30, 1958, at his home in Gurdon, Arkansas. Dr. Ross was a graduate of Hendrix College and Tulane University, and received his master's degree in public health at Harvard University. He was formerly State Health Officer, serving from 1943 until 1951. He was a member of the American Medical Association, American Association of Public Health Physicians, American Public Health Association

## Answer—What Is Your Diagnosis?

### ANATOMY AND DIAGNOSIS

Osteochondrosis tarsal navicular (Kohler's disease rt.). Code No. 809-798.

Clayton Donal, age 8; race, W; sex, M. History No. CCD X-1897.

CLINICAL DATA: Patient twisted right ankle in March, 1958, and noticed pain and swelling right ankle.

LAB DATA:

SURGERY:

PATHOLOGY:

X-RAY FEATURES: X-rays showed irregularity and sclerosis of the tarsal navicular. By August 28, 1958 almost normal architecture was present.

E. E. LITTLE, M.D.

\*University of Arkansas Medical Center Department of Radiology.



tion, Arkansas Medical Society, Arkansas Public Health Association, American College of Preventive Medicine, and Arkansas State Medicine Board. He was a member of the First Methodist Church of Gurdon and was a Mason.

Dr. Ross is survived by his wife, Mary Irene Ray Ross, two daughters, Elizabeth Sue and Martha Ann, two sons, Thomas Trigg, Jr. and James Ray, two brothers and four sisters.

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## PERSONALS AND NEWS ITEMS

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On February 15-26, 1959, The American Otorhinologic Society for Plastic Surgery, Inc., met in Mexico City. The presiding officer was Dr. Paul Mahoney, of Little Rock, Arkansas.

Announcement has been made by Dr. R. W. Ratton and Dr. W. M. Lamb of the opening of the Medical Arts Hospital and Clinic at Manila, Arkansas.

The National Vitamin Foundation has awarded a three-year, \$16,500 Russell M. Wilder Fellowship to Dr. Coy D. Fitch, Jr., of Beebe, Arkansas, intern at the University of Arkansas Medical Center, for his work on muscular dystrophy. The fellowship goes to one man in the U. S. each year.

Dr. W. Martin Eisele, of the Burton-Eisele Clinic, Hot Springs, has been elected president of the Hot Springs Chamber of Commerce for 1959, the third generation of his family to hold that office, his grandfather having held it in 1914 and 1916 and his father in 1930 and 1932.

Dr. L. H. McDaniel of Tyronza, widely known for his American Medicine's "Festival of Faith," was the principal speaker at a Rotary Club meeting in Little Rock on December 11. The subject of his talk was "A Vision of Medicine in the Last Half of the 20th Century."

Dr. Morton Wilson was elected chief of staff at Crawford County Memorial

Hospital for the year 1959 to succeed Dr. M. C. Edds. Dr. Edds is now vice chief of staff. Dr. J. N. Thicksten of Alma was elected to serve as secretary of the staff.

New medical director of the Pine Bluff-Jefferson County Health Department is Milton R. Wirthlin, Captain, U. S. Navy, who will assume his duties after July 1, 1959. Dr. Wirthlin, a native of Arkansas, is currently stationed at San Diego, Calif. He will retire June 30, after 30 years in the Navy.

Dr. Gilbert D. Jay, III, West Memphis surgeon, was recently re-elected chief of staff of Crittenden Memorial Hospital. Also re-elected were Dr. William J. Wright of Earle, vice chairman, and Dr. Milton Lubin of Turrell, secretary.

Dr. Fred O. Henker, III has been appointed an instructor in the Department of Psychiatry at the University of Arkansas School of Medicine. Dr. Henker was formerly chief of the Psychiatry Service at the Veterans Administration Hospital in Jackson, Miss., and clinical instructor at the University of Mississippi Medical Center.

The American College of Surgeons notified Dr. John W. Dorman of Springdale in December that he had been accepted as a Fellow.

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## *Proceedings of Societies*

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Dr. Julian Fairley of Osceola was elected president of the Mississippi County Medical Society at a meeting held at the Osceola Memorial Hospital in December.

Other officers elected to serve with Dr. Fairley were: vice-president, Dr. C. R. Cole, Blytheville; secretary-treasurer, Dr. Eldon Fairley; Censor, Dr. L. D. Massey; Program Chairman for the northend of county, Dr. W. W. Workman, Blytheville; Program Chairman for the southend of the county, Dr. L. D.

## FEATURES

Massey. Dr. Eldon Fairley was named as delegate to the State Society.

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The annual joint meeting of the Sebastian County Bar association and the Sebastian County Medical society was held at the Ward hotel Dec. 16.

Program at the meeting concerned the new "code for physicians and attorneys."

\* \*

Dr. James Freeland was elected president of the Lincoln County Medical Society in the annual meeting for election of officers in December.

Dr. Charles W. Dixon of Gould was elected vice president and delegate to the state medical meeting.

Dr. R. C. Petty was elected secretary.

Dr. Freeland was also elected alternate delegate to the state meeting.

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The Crittenden County Medical Society met on Dec. 30 for election of officers for the coming year, with Dr. Milton D. Deneke of West Memphis being elected president to succeed Dr. Ralph Hamilton.

Other new officers of the county group are Dr. David H. James, vice president, and Dr. C. W. Peeples, Jr., secretary-treasurer. Both are West Memphians.

\* \*

Dr. Alfred Hathcock has been elected president of the Independence County Medical Society, succeeding Dr. Hickman Calaway.

Other new officers include Dr. Olen Bridges, vice-president; and Dr. Paul Gray, secretary-treasurer.

Dr. Charles Taylor was named delegate to the Arkansas Medical Society convention, and Dr. James Lytle of Mammoth Spring was named alternate delegate.

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Meeting on December 12 at the home of Dr. Ben N. Saltzman, the Baxter Coun-

ty Medical Society re-elected last year's officers to serve for another year.

Dr. Saltzman was re-elected president, Dr. John F. Guenther was re-elected vice president and Dr. Walter S. Guinee was re-elected secretary. Dr. E. M. Gray was re-elected as a delegate to the state convention of the Arkansas Medical Association.

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The Hot Springs-Garland County Medical Society endorsed use of the Army-Navy hospital as a Rehabilitation Center — if the facility is abandoned by the Army.

The action came as the Society held its December meeting at the Army and Navy hospital officers library.

Dr. Robert Atkinson, president, presided at the meeting, which also named new officers who took over their new duties Jan. 1st.

Dr. George Fotioo was named president, Dr. Joseph Rosenzweig, vice president and Dr. W. R. Lee, secretary-treasurer.

Dr. L. E. Reed, Dr. Ralph Patterson and Dr. James Leatherman were named as delegates to the State Medical Society's spring meeting.

\* \*

The Third Councillor Medical District held its December meeting at the Rusher Hotel and had as guests members of the legislature of the district.

Dr. Elvin Shuffield and Attorney Eugene Warren, both of Little Rock, were the speakers for the evening.

A social hour and dinner were held prior to the meeting.

\* \*

Contributors to the American Medical Education Foundation from the State of Arkansas — December 1958.

Dr. Charles Anderson, Pine Bluff	\$25.00
Dr. Hugh R. Edwards, Searcy	50.00
Dr. J. B. Kittrell, Texarkana	25.00
Dr. Fount Richardson, Fayetteville	50.00
Dr. R. H. Chappell, Texarkana	200.00
Dr. Eugene R. Crawley, Little Rock	5.00



## FEATURES

Dr. Jean C. Gladden, Harrison	10.00
Dr. John T. Gray, Jonesboro	25.00
Dr. C. D. Gunter, Siloam Springs	25.00
Dr. C. L. Harris, Hope	10.00
Dr. J. D. Huskins, Siloam Springs	25.00
Dr. M. A. Jackson, Little Rock	10.00
Dr. W. P. Kolb, Little Rock	100.00
Dr. Jim E. Lytle, Mammoth Springs	5.00
Dr. Sanford C. Monroe	25.00
Dr. Harold J. Morris, Pine Bluff	10.00
Dr. B. J. Puckett, Siloam Springs	25.00
Dr. Guy U. Robinson, Dumas	150.00
	\$775.00

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## TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

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### **The Control of Acute Respiratory Disease in Industry—With Special Reference to Influenza**

By L. Holland Whitney, M.D., Medical Director, American Telephone and Telegraph Company, Industrial Medicine and Surgery, October, 1958.

*One quarter of the lost time in industry is attributed to respiratory diseases. For some of these, effective vaccines have been developed. Children are the main source of respiratory illnesses among adults.*

The significance of respiratory diseases as a cause of absence in industry has been well documented by many studies. Acute respiratory diseases account for nearly half of the incidence of absence and at least one quarter of the total lost time. This is estimated as amounting to 150 million work days annually, in addition to the reduced efficiency which results from employees who are on the job in various stages of illness. From the viewpoint of cost alone industry should have a considerable interest in health maintenance and disease prevention.

### **ABSENTEEISM**

Despite the fact this country is enjoying the highest level of health in the world, the direct cost of absence owing to illness is increasing. This undoubtedly reflects the trend toward broader coverage, increased scale of benefits and a tendency for more liberal interpretation of what constitutes justifiable cause for absence.

Let us consider briefly the complex subject of absenteeism. The term implies a medical problem when we know in fact that there are many other factors involved including personal motivation, family responsibilities, pay treatment, etc. Measures directed solely to the control of diseases as such quite probably never will provide the entire answer. There is good reason to believe that there is a strong interrelationship between a man's health, behavior and job performance with the kind of man he is, where he comes from, what he wants and needs, what he is facing now in his home and personal life and what he has faced in the past. There is little doubt that when science has made available to us the means for prevention and control of the common cold, the favorable impact on absence will be spectacular.

### **RESPIRATORY DISEASE**

Considerable progress has been made in the study of acute respiratory diseases during recent years. There is good reason to believe that as more money is channeled into research in this field, we will have even more precise diagnosis and more knowledge of prevention and control.

At present the causative agents of respiratory infections can be identified in approximately 50% of all cases occurring in children and adults, according to the Scientific Advisory Committee of the Common Cold Foundation. These identifiable agents include the influenza viruses, the adenoviruses, the J.H. virus viral agents 2060 and Myxo viruses.

In the infections caused by these different viruses an immune response occurs, followed by protection for variable periods of time. The scientists believe then, that properly prepared vaccines similar in the antigenic composition to the viruses in question would have an immunity and protective value. This has been shown to be true for influenza and for types three, four and seven of the adenoviruses.

There remains a sizeable segment of upper respiratory tract infections, most if not all of which are caused by viral agents. It is in this segment, the most frequent of all, the common cold falls. At the present time there is no means of controlling this group.

The most effective way to use immunizing agents is during childhood which is the normal time of life in which the largest

number of respiratory infections occur. In a study made in Cleveland it was found approximately 75% of the acute respiratory infections were introduced into the home by the children.

If we should then only attempt to protect population groups by vaccinating the adult members, the source of these infections which reside mainly in children would not be affected. The control and prevention of acute respiratory infections is indeed complicated.

At this stage of our knowledge on the control of respiratory diseases in industry we are limited to three general methods of approach. The first avenue of control might be considered under the general heading of health education, which includes personal hygiene and such simple procedures as covering the sneeze, washing the hands before eating and maintaining that intangible something known as general body resistance. Adequate control of the environment by proper ventilation, heating and good housekeeping is also important. And finally the specific measures already available through vaccines, antibiotics and the sulfa drugs can be considered.

### INFLUENZA VACCINE

Some industries have been offering the polyvalent influenza vaccine to their employees each fall for the past eight or 10 years. The impracticality of accurate prediction of an epidemic and the uncertainties of the strain and type of virus likely to be responsible have prompted others to discontinue this procedure. Vaccines effective against the adenovirus infection also have been developed. Doctor Maurice Hillman, who developed the bivalent type of vaccine, does not recommend its use at this time in the adult civilian population because of the low attack rate. He is, however, enthusiastic about the results obtained in reducing the incidence rates for febrile respiratory

illnesses in military recruit populations.

This brings up another point. I believe we in industrial medicine have a real obligation to take an increasing interest both in support of scientific studies and in cooperative ventures to evaluate the progress made.

During the fall of last year over 400,000 Bell System employees were vaccinated against the type A-Asian strain of influenza. The incidence of significant reaction to the vaccine was negligible. At our headquarters location an analysis of the absences in excess of seven days due to all respiratory diseases among vaccinated and unvaccinated employees during the months of October and November shows a ratio of 1.0 to 4.2 respectively. This represents a group of nearly 9,000 employees, approximately two-thirds of whom elected to be vaccinated.

These preliminary reports are presented only as an indication of apparent results, and not as a finished or scientifically validated piece of research. Our experts assure us that the difference between the two groups is statistically significant.

As preventive measures against respiratory disease become available, industry is in a position to reach a considerable segment of the adult population. The particular industry's decision on whether to do so will be governed by many factors which include costs, anticipated results, company policy and the potential threat of an epidemic. Perhaps one of the most important considerations will be the possible impact of the disease on the productive capacity of the industry and the significance of this to the welfare of the public which it serves.

The goal still ahead is a challenge to all of us, and in reaching it there is ample opportunity for cooperative efforts between industrial medicine, private medicine, and both voluntary and public health agencies.



# The JOURNAL

## OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

APRIL, 1959

Number 11

### Alcoholism and the Medical Profession<sup>§</sup>

MARVIN BLOCK, M.D.\*

Alcoholism as an illness has been known and recognized for many years. In the remote as well as in the more recent past, many physicians have recognized this illness as a medical problem. Until comparatively recently, however, the organized profession as a whole did very little about it. In the last ten or twelve years there has been a noticeable change in the attitude of organized medicine, and consequently of many individual physicians toward this disease. Before that time, many enlightened physicians had at various times attempted to place alcoholism in its proper perspective as a medical problem. They met with very little success, however, due to what seemed to be a refractory attitude on the part of the organized profession itself. The attitude of medical organizations might have been due to the influence of the general attitude of the public, which looked upon alcoholism more as a moral problem than a medical one.

Although he may not have been the first to do so, the Commissioner of Health of my own city, at the turn of the century, addressed the City Council on this problem of excessive drinking, and stated that in his opinion it was an illness and not a crime to be an alcoholic. In a statement which is recorded in the annals of that council meeting, he recommended that jail sentences meted out to correct the problem be changed to hospitalization for those people who habitually drank excessively, so that they could get medical care and proper rehabilitation. However, I am afraid that his words fell

on disinterested ears, since not much was done about the problem. I am sure that many other physicians met with frustration in those days when they attempted to do something about alcoholism. It was not until comparatively recently that the organized profession, as such, began to take a constructive interest in this problem.

In 1948, a prominent physician of Erie County in New York, at one time president of his county medical society, having observed the successful efforts of Alcoholics Anonymous in rehabilitating alcoholic people, felt that the problem properly belonged within the province of medicine. Through his efforts, his county medical society appointed a Committee on Alcoholism, with himself as chairman. He also helped formulate a citizens committee for education on alcoholism. The purpose of this educational committee was to bring the problem before the public, its extent, its many ramifications, and the possibilities of treating and rehabilitating patients suffering from the disease.

The purpose of the medical committee was to stimulate interest among physicians in the subject of alcoholism and to urge them to treat such patients from the medical viewpoint. This same physician, himself a recovered alcoholic, then decided to carry his ideas up through the ranks of the organized medical profession to see if he could not get concerted national action toward increasing interest in this problem among doctors. As a result of his work, at their meeting in June of 1950, a resolution was presented to the House of Delegates of the American Medical Association establishing a Committee on Prob-

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§Presented April 17, 1958, Physicians' Seminar on Alcoholism, Little Rock, Ark.

lems of Alcoholism in that organization. With the passage of this resolution, it was recommended that the problem be studied by an already existing commission on chronic illness.

Six months later, in December, 1950, a new resolution was introduced in the House of Delegates asking that the previous action of the House be rescinded, and that a Special Committee on Problems of Alcoholism be appointed. This was referred to the Committee on Chronic Diseases. A year later, in 1951, a Committee on the Problems of Alcoholism was appointed as a Subcommittee of the Chronic Disease Committee. About ten members were named to this Committee. Since I was a member of that Committee, I know that it never met, because no appropriation was made for its meeting. With no money available, the members of the Committee could not get together.

In 1952, a year after the Committee had been appointed, the Chairman and I were discussing this matter and the inability of the Committee to meet because of the lack of funds for this purpose. We wrote to the American Medical Association and its Chronic Disease Committee to ascertain what action had been taken regarding the possibility of our Subcommittee meeting. We were informed that the Subcommittee had been disbanded. Although we were members of the Committee, no notification had ever been received of such dissolution of the Committee. We then asked for action on this problem, and the appointment of a new Committee. In addition, we asked that an appropriation be made so that it could function.

During this time, however, although the medical committee had not been able to carry out its work, the lay committee on education on alcoholism was functioning very well. The education committee in our area had become affiliated with the National Committee on Alcoholism, which now bears the name National Council on Alcoholism. The educational campaign in Western New York was carried on very energetically and began to bear fruit. As a result of its action, the University of Buffalo Medical School estab-

lished a Rehabilitation Center for alcoholics. This was located in the Chronic Disease Institute under the auspices of the National Institute of Mental Health and the New York State Health Department, in conjunction with the University of Buffalo, as a tripartite arrangement.

In 1953, we invited the Executive Secretary of the American Medical Association's Committee on Mental Health to visit our facilities and discuss the matter of a Subcommittee on Alcoholism. The American Medical Association decided that the problem of alcoholism properly belonged under the Committee on Mental Health. As a result of our discussions with its Executive Secretary during his visit to Buffalo in December of 1953, a Subcommittee on the Problems of Alcoholism was appointed under the Committee on Mental Health, with the authorization of the House of Delegates. I was requested to take the chairmanship of this Subcommittee. I accepted the position on the condition that we be given a free hand to act under the Committee on Mental Health and that sufficient funds be allocated for us to meet and operate. These conditions were met and the Committee was appointed. There were representatives from the New England area, the middle Atlantic and the Southwest.

With an adequate annual budget, early in 1954 the Committee began its work. Our first meeting was held in Boston, Massachusetts, on February 6, 1954. Since that time, there has been considerable activity. So far, we have had thirteen meetings. In addition, in cooperation with the Council on Scientific Exhibits, we have built two exhibits on alcoholism at a total cost of several thousand dollars each. These exhibits have met with a wonderful reception wherever they have been sent. They are available for exhibit not only at the meetings of the American Medical Association Conventions, but also for meetings of all state and county medical societies that request them.

The Committee on Alcoholism has succeeded in stimulating interest in the problem in the various state medical societies. Whereas before this Committee was formed there were very few state



medical societies which had committees working on the problem, there now exist committees on alcoholism or committees dealing with the problem in thirty-seven of the forty-eight states. Some of the other committees handling the problem bear such titles as Mental Health, Public Health, or Industrial Health. Since we do not study the activities of individual county societies, we have no way of telling how many such committees exist among the county medical organizations.

In 1955, the Committee on Mental Health was raised to council status, and became the Council on Mental Health, and the Subcommittee on Alcoholism was thereafter raised to full committee status, and is now the Committee on Alcoholism of the Council on Mental Health.

In 1956, our Committee began a series of articles in the Journal of the American Medical Association, under the auspices of the Mental Health Council. Over a three month period, four articles appeared in the Journal dealing with the medical, physiological, psychiatric, and sociological aspects of alcoholism. These papers were written by our Committee members. Thousands of reprints of these articles have been distributed throughout the country as requests for this material poured into the headquarters of the American Medical Association. One order of five thousand copies was received for one of these articles. I mention this only to emphasize the apparent interest on the part of the medical profession in the problem of alcoholism. Only such increased interest would stimulate that number of requests for information on the subject. It must be borne in mind that these articles appearing in the Journal of the American Medical Association are strictly for the medical profession, and written on a professional level.

Later that year, in 1956, at the request of the Committee on Alcoholism, and through the Council on Mental Health, the American Medical Association purchased a complete set of the Abstract Archives of the Alcohol Literature, containing thousands of abstracts of articles on the subject of alcoholism. This set of Archives was placed in the headquarters of the American Medical Association in

Chicago, and announcement of its purchase appeared in the Journal. The number of inquiries on the subject of alcoholism and its various ramifications was so enormous as a result of this announcement that the staff found itself swamped with requests, and fell months behind in answering. If there had been any doubt in our minds before that the medical profession was interested in the subject of alcoholism, they were now dispelled. It was necessary that we send one of our staff to Yale University to learn how to operate the Archives files more efficiently in order to answer these inquiries within a reasonable time. Even so, it took months before the first avalanche of inquiries were answered. While the number of such requests has diminished somewhat since that initial announcement, it appears that this is not due to the lack of interest on the part of physicians, but rather to the fact that the availability of these Archives has not been again publicized. Another announcement of its availability, I am sure, will bring another wave of inquiries. Actually, we have purposely postponed such additional publicity because of the limitation of our staff. However, it will again be called to the attention of the profession in the near future, and, as our staff increases, it will be continually put before them.

Later in 1956, a resolution was brought before the House of Delegates of the A.M.A., urging all general hospitals throughout the country to admit alcoholic patients to their general medical floors. This resolution had been approved by the Council on Mental Health and the Board of Trustees. It was imperative that if physicians in training were to understand the problem, patients with the diagnosis of acute or chronic alcoholism must be admitted without prejudice to general hospitals. The resolution was unanimously passed by the House of Delegates. This represented a tremendous victory. The largest medical organization in the world had now recognized alcoholism as an illness within the purview of medical practice and properly classified as a disease which warrants admission to general hospitals for those people suffering from it. The passage of this

resolution by the House of Delegates was the stamp of approval of the American Medical Association that patients suffering from this disease were proper candidates for admission to general hospitals. It presaged a new era in combating the disease. Since then the resolution has been forwarded to the Council on Education and Hospitalization, as well as Accreditation of Hospitals. The purpose of this action is to promote education on alcoholism among hospital staffs and resident staffs so that patients suffering from this disease can be properly treated when they are admitted. I am informed that last year a similar resolution was adopted by the Board of Trustees of the American Hospital Association.

In 1957, the Committee on Alcoholism prepared for publication a manual for the use of medical practitioners. This manual on alcoholism consists of the four articles printed in the Journal, the guest editorial on alcoholism which appeared in the Journal, the announcement and instructions for the use of the Abstract Archives of the Alcohol Literature, and other pertinent material useful to practitioners in treating alcoholic patients. In addition, the Committee has also produced a directory of rehabilitation resources for those interested in the alcoholic patient. These are listed by states. This directory and the manual, an eighty-seven page booklet, as well as individual reprints of the articles, are all available at national headquarters. I might say that the Committee had already received 20,000 advance requests for the Manual on Alcoholism before it was printed. This portends a successful distribution of this booklet. It seems apparent that the medical profession was awaiting these steps for a long time, and the publication of this volume, I am sure, will answer a long felt need.

This year, the Committee is in the process of making a survey of the teaching of alcoholism in medical schools. This is being done in cooperation with the A.M.A. Council on Education and Hospitals, and with the Association of American Medical Colleges. At our last meeting in January, we arranged for a study of what

the Committee feels is necessary in the way of education for medical students on the subject of alcoholism. The results will be forwarded to the American Association of Medical Colleges for its perusal and comment.

In addition, we are making a survey of the laws of the various states which relate to alcoholism. This study is being carried on in cooperation with the Legal Department of the American Medical Association. In all probability, we shall enlist the aid of the bar associations at state levels, and at the national level, as well. Eventually, we hope to formulate a uniform law regarding the handling of alcoholics and proper legal disposition of such cases. As you are aware, this is a tremendous undertaking and will occupy a great deal of our attention. We hope, before long, to publish a directory of the laws relating to alcoholism as they exist in the various states, so that any physician in doubt as to how to approach his alcoholic patients from a legal viewpoint can refer to this directory and find what his responsibilities and obligations are toward these patients.

The Committee on Alcoholism has approached Blue Cross headquarters regarding its attitude regarding the payment of hospitalization expenses for patients suffering from alcoholism in the various areas of the country. This is a tremendous undertaking, since, as you are aware, various Blue Cross corporations have various regulations regarding this matter. We hope that by publishing the results of those corporations who do pay hospital benefits for alcoholism, we will be able to induce all Blue Cross corporations to pay for such hospitalization. I know that in our own area, a study of the problem indicates that the patients suffering from alcoholism are no more expensive as far as the Blue Cross Corporation is concerned than others suffering from other illnesses, and in our area, they are entitled to full coverage—just as with any other disease.

I have already mentioned that the Committee for Accreditation of Hospitals has received the resolution on hospitalization of alcoholics which was passed by the House of Delegates in 1956. This Com-



mittee is now studying the problem from the viewpoint of implementing the ideas which were incorporated in that resolution as they relate to qualification of hospitals for teaching purposes.

All of the steps enumerated are part of the 18 point program which our Committee adopted and presented to the Council on Mental Health in 1954. This 18 point program is available to anyone who requests it. It outlines the proposed activities of the Committee on Alcoholism for the future as well as some of the points which we have already accomplished. For those who are interested, this program can serve as a model for state programs, since the same activities which have been carried on at the national level can be done by state medical societies at their level. If each state were to carry out the points of this program, it would help to make our task a great deal simpler, and would hasten the uniform approach to the problem throughout the country.

Other activities of the Committee on Alcoholism which have been promoted throughout the past several years have been in the direction of educating the profession regarding the subject of alcoholism. In 1954, a conference of mental health representatives of all the state medical societies was held in Chicago, under the auspices of the Mental Health Council. The conference was devoted to the problem of alcoholism, and discussions took place at the headquarters of the American Medical Association where thirty-six state medical societies were represented. Various aspects of the problem were discussed and the state representatives were urged to carry back to their societies the message promoting interest and education on alcoholism.

In 1956, another such conference was held at which sixty-five representatives from forty-one states were present. These were mental health representatives from the state medical societies. Alcoholism, of course, was not the only subject which was discussed. At this particular conference in 1956, the program was divided into four parts. They were: Child Psychiatry, Hypnosis, Tranquilizing Drugs, and Hospital Treatment of Al-

coholics. The conferences were conducted as workshops, and the members representing the various states were divided into these four groups and given their choice as to which subjects or workshops they wished to attend. It might surprise you to know that of the four workshops with the titles mentioned, the subject Hospital Treatment of Alcoholics drew about twice as many people as any of the other three, and certainly all of the subjects were fascinating. I mention this only to illustrate the increased interest in the treatment of alcoholics in the country.

Last year, a similar conference was held at which several subjects were treated. I attended the workshop on Mental Health Problems in Industry. It was not surprising to find that the problem of alcoholism occupied a good deal of discussion in this particular workshop. It was agreed by most of the people there that alcoholism was one of the mental health problems most often encountered in industry. At the end of the conference, the representative of the Women's Auxiliary of the A.M.A. and its Mental Health Committee suggested that as its project for 1958, the Auxiliary consider the excessive drinker and automobile driving. While this may not necessarily allude only to alcoholism, excessive drinking must be considered in this project. Again, this is mentioned only to illustrate the increased interest on the part of the medical profession, the wives of physicians, and the public on the subject of excessive drinking and alcoholism.

Last year, in 1957, the Mental Health Council permitted our Committee on Alcoholism to provide a new service to physicians. It authorized us to hold institutes on alcoholism for any state medical society that would request it. We were given authority to hold as many as three of such institutes annually. To date, we have held two such meetings, one in San Francisco for the California State Medical Society, and one in Galesburg, Illinois, for the Illinois State Medical Society and several county societies from adjoining states and areas. Both of these institutes were considered outstanding successes, judging from the responses of the physicians attending. No only are the

talks given at these institutes instructive to physicians, but the discussions following are stimulating and provocative. These meetings give the doctors an opportunity to voice their opinions, to relate their experiences, and to exchange ideas on treating this problem from the physicians' viewpoint.

But the organized profession itself can be of very little help unless the individual physician recognizes his responsibility in his own community to the patient suffering from alcoholism. One thing is clear. He can no longer avoid this issue. He can no longer neglect these patients. He cannot pass the buck. He must treat them. There are methods, and satisfactory ones, of doing this. There is sufficient evidence that good results can be obtained. True, we cannot promise cures since a cure would imply that the patient might be able to drink normally again. However, complete recovery can be attained by the patient with the help of his physician, and it is to this end that the doctor must work. Properly trained in the medical approach to this problem, and with sufficient psychiatric orientation with which every modern physician today is equipped, very satisfactory results can be obtained with most of such patients. It must be recognized, however, that there is no specific for this disease. There is no antibiotic or chemical miracle drug which will do away with the illness. The physician must spend sufficient time with his patients. He must not only rehabilitate him physically, but he must help him to mature emotionally. This cannot be done with shot-gun prescriptions or pills. It requires time, patience, and investigation. The physician must study this disease as he does other diseases, its etiological factors, its background, and its history. He must do complete physical examinations. He must perform necessary laboratory tests. He must make definite evaluations, and he must pursue the therapeutic programs with thoroughness and understanding. There are available to the physician that wants them post-graduate courses on this disease, as there are for others. If they do not exist in his own area, then he must request or organize such courses.

The Committee on Alcoholism of the American Medical Association stands ready to help him in these matters. If he will request of his state medical society or his county medical society that such courses be given and such education be made available, they, in turn, can request help from our Committee and we will be more than happy to supply them with information or actual teaching facilities, if necessary.

In addition, the physician must serve as a case finder. As with other diseases, the answer to this problem lies in prevention rather than in therapy. Therapy must be provided for those patients who are presently suffering from alcoholism, but prevention of this disease, as with many others, is the eventual solution to the problem. It is important, therefore, that the physician be a case finder. It is important, also, that his history of any patient include a detailed history of his drinking patterns. The slightest indication of trouble as a result of drinking should alert the astute physician to the possibility that here is a potential alcoholic. By instituting proper prophylactic measures, by careful advice, many cases of alcoholism can be prevented. Just as the competent physician will look upon hemoptysis as a possible sign of tuberculosis, gastric distress as a possible forerunner of peptic ulcer, glycosuria as a possibility of diabetes, so he must look upon trouble as a result of drinking as an indication of a possible case of alcoholism. It is never too early to detect these signs if one keeps a weather eye open for them.

In addition to the practicing physicians, other medical agencies must be used in combating the problem of alcoholism. Not the least of these is the general hospital. The general hospital should accept these patients as sick people who deserve and require their attention. Acute alcoholic intoxication can be, and often is, a medical emergency. Hospital beds should be available to such sick people. They must be adequately treated from the medical as well as the psychiatric viewpoint. Hospital personnel should be properly instructed, not only in the medical and psychiatric therapies for this disease, but also



with the proper attitude which should be adopted toward such patients. One does not scold a sick person, or lecture him because he is sick. The proper approach toward any sick person is a great step toward helping him, and the attitude of the therapist is a tremendous step toward having the patient accept the kind of help which he requires. House staffs must be properly trained in this attitude and this approach.

All hospital personnel should be instructed about treating these patients, and all must adopt the proper attitude toward them. This is especially important for the nurse. The nurse in her community has three capacities professionally. First, she, also, is a case finder. This is especially true of the district nurse. She, more than anyone else, perhaps, can detect the early signs and symptoms of alcoholism in members of the families which she visits. A timely warning can prevent a great deal of grief for such a family. On many occasions, members of a family will confide in a visiting nurse more than they will in anyone else. Here, then, is her opportunity to serve as a case finder and refer these people to the proper resources for help. I need not add that in her actual nursing service she can also be of tremendous help.

The attitude of the nurse in treating the sick alcoholic is one of the greatest therapeutic measures that can be brought to bear on these patients. Her sympathetic approach and her understanding of his problem can be the turning point in his motivation. Often the patient will confide in the nurse many things which he cannot or will not tell his physician. Such information conveyed to the doctor can in many cases help the physician un-

derstand the problems which beset these patients and he can then put the patient's mind at rest or open an avenue for proper discussion. Here, again, the sympathetic understanding of the nurse of the emotional problems underlying this illness can be a great therapeutic aid.

The third area in which the nurse can be of great value is her role as an educator in the community. Of course, this also includes the physician. We must remember that we cannot afford only to be doctors and nurses. We are also citizens, and as such we must take an interest in our communities. We must take sufficient interest in the problem to engage in activity with the lay groups for education on alcoholism, as well as in professional groups. Both physicians and nurses can carry the message of sympathy and understanding for these patients, so that they can help them to acquire the kind of aid which they need and refer them to the resources to which they can go for such help.

Where all of the facilities which can be provided are brought to bear by the physician, and the ancillary professions, and where there is sufficient understanding on the part of all of these people of the problem, enough interest can be stimulated toward gaining more knowledge of this tremendous problem. With such increase in interest, more facilities for research can be provided. As a result of more research, more knowledge is forthcoming. As with many medical problems in the past, increased research and resulting knowledge will eventually lead to the answers which are sought. With more attention focused properly, and with sufficient work, an eventual solution must be reached.

# Clinical Correlation of Papanicolaou Smears of the Cervix with Subsequent Biopsies

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## BACKGROUND

It was about 1947 or 1948, while I was working in Houston, that exfoliative cytology began to come into prominence in that city. Only one pathologist, a resident at a large hospital, took up the study, although the town contained ten or twelve practicing pathologists. I asked this budding cytologist if he would advise me to make a study of the subject. His answer was, "Don't waste your time." This seemed to be the prevailing attitude of the nation's pathologists at that time. The pathologists contended that cancer could not be diagnosed by an examination of a single cell, that cancer was not characterized simply by cellular changes, but by a cell pattern. In order to see a cell pattern it was necessary to have a histologic section. Because of the rejection of cytology by pathologists, the method was taken up by other people. Gynecologists, anatomists and public health men were among those who began examining cervical smears.

By 1956 pathologists had been converted to the extent that the American Society of Clinical Pathologists, the College of American Pathologists and the International Cancer Cytology Congress all met together at the Drake and Knickerbocker Hotels in Chicago. This, I think, was evidence of the fact that the pathologists had come to realize that, although perhaps cancer could not be diagnosed by the cytological method, other people were at least detecting cancer, and if the pathologists did not want to be back numbers they had better get on the band wagon.

## PRESENT STATUS

Most pathologists now recognize that cancer can be detected by some cytological methods, although definitive diagnosis should be left for histology. Many of us are now saying, "Thanks for working the method up for us. Now we want it

back, because: (a) it is a laboratory procedure and (b) we need the money." Some pathologists are Papanicolaou smear enthusiasts and some are not. The attitude of the pathologist largely determines what sections of the country are "Pap. territory" and what sections are not. About eighty to ninety percent of the pathologists responding to questionnaires in Texas and Arkansas a few years ago said that they would accept Papanicolaou smears if they were sent to them. Only a small percentage, however, will go out and beat the bushes for Papanicolaou smears. There are many who are indifferent toward Papanicolaou smears and a few who actually discourage them. There are some pathologists who stain their smears with hemotoxylin and eosin, along with the general tissue slides, while others have separate staining set-ups, using Papanicolaou's stains. The pathologist who does not accept the validity of Papanicolaou smears today is the exception rather than the rule. Even though a pathologist may not encourage smears to be sent to his office he usually agrees that they are valuable in the hands of certain people.

Perhaps the major difference in pathologists who do cytological examinations is in the matter of employing screeners. There is a great difference in the screening method and the scanning method of examining a slide. In screening, the smeared portion is usually covered with a cover slip measuring 22 x 50 mm., whereas the usual size of the large histology cover slip is 22 x 40 mm. The screener must look at every cell under the cover slip, moving the slide back and forth or up and down under the microscopic field, using the low power of the microscope, spotting whatever cells appear normal. When a suspicious object is seen, he swings the objective around to "high dry." Those cells which appear suspicious or malignant he circles for his immediate superior to examine later. From there

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the positive and suspicious slides move upward through senior screeners and junior pathologists to the senior Papanicolaou expert. In Texarkana this chain consists of only two individuals. In some places, however, as many as five or six people may examine one slide before a final opinion is given.

Screening is a long, boring, tedious procedure. A screening technician can examine about four slides per hour on the average under pressure. He cannot usually keep up this pace for several eight hour days.

The pathologist who is without a screener simply does not have the time to screen all his slides himself. He scans them by taking a quick look around the slide and, "Well, I don't see anything here," or "Looks like there are a few suspicious cells." Naturally the scanner, who looks at relatively few cells, misses many positives which would ordinarily be picked up by the screening method, which involves examining every cell in the smear.

#### GENERAL PRINCIPLES IN THE USE OF PAPANICOLAOU SMEARS

These principles apply mainly to the cervix uteri, although the method is applicable to other areas. If, in the examination of a patient, a visible lesion is seen on the cervix, this lesion should be biopsied rather than smeared. The cervix which gets a smear is the one which would not ordinarily be biopsied. The patient with symptoms of bleeding, spotting or even low pain or pelvic pain with a perfectly clean cervix and no positive findings on bimanual examination calls for a smear.

In the known carcinoma patient who is about to receive radiation therapy it is possible to examine the smear, do cell counts and come out with a sensitivity response (S-R), an index which is said to give some idea as to whether this patient is going to respond favorably to x-ray therapy (4). In the patient who has had radiation therapy a radiation response (R-R) may be done and the cells which show the radiation reaction are enumerated. This also gives some idea of the prognosis of carcinoma (5, 6).

Papanicolaou smears have been used to evaluate the strength of a corpus luteum hormone in the pregnant patient.

In patients who have had a mastectomy for carcinoma, Papanicolaou smears of the cervix have been used to evaluate the presence of significant ovarian hormone. If estrogenic response is seen in the Papanicolaou smear there are some authorities who advocate the removal of the ovaries. If there is little or no estrogenic response, then the removal of the ovaries is not necessary, since they exert no hormonal influence on the mammary carcinoma anyway.

Mass surveys have been made in which all the women in a community who were willing to do so received Papanicolaou smears. In the Shelby County, Tennessee, project clinics are held at stated intervals in factories, business houses, schools and hospitals and all the women who are willing to do so come and have a smear made, not by a physician but by a smear-taker sent out by Doctor Erickson's laboratory. These smears are collected, screened and evaluated (1).

Perhaps the most practical application of the survey method which this audience may find is in the clinical office survey. We have one clinic in Texarkana where the doctors take cervical smears on all gynecology patients. A few unsuspected carcinomas have been picked up in this way. After a year or two it was decided that, since no advanced carcinomas of the cervix had developed in gynecology patients under observation by this clinic, it might be a good idea to do a Papanicolaou smear on each adult female patient, gynecological or otherwise. This represents a decision on the part of the gynecologists rather than any promotion scheme by the pathologists.

A positive or suspicious smear is not considered to be a definitive diagnosis of carcinoma of the cervix. The cervix should always be biopsied. If it is suspicious only, and the smear is perfectly satisfactory, repeat smears are advisable at intervals of one month to a year, depending on the age of the patient, and on the nervous state of the gynecologist and the patient.

Fees for Papanicolaou smears vary from \$3.00 to \$10.00. The usual cost of doing the procedure is around \$3.00 if the pathologist makes expenses only. The pathologist does benefit, however, from the revenue from the series of biopsies which results from positive and suspicious smears.

ANALYSIS OF MATERIAL

Table I shows the ages of the patients who have had Papanicolaou smears which were either positive or suspicious enough to warrant a biopsy. The total number of cases examined was 1,469. Of this number 16 had positive smears and 18 suspicious smears. Of the 16 with positive smears, eight proved to have either carcinoma in situ or invasive carcinoma. The others have so far failed to show histologic carcinoma. Of the 18 patients with suspicious smears, four had carcinoma in situ or invasive carcinoma.

Table II gives the percentage of the biopsied cases with carcinoma. It will be

seen that of the cases with positive smears, 50% of those biopsied were found to have carcinoma proved histologically. Of the patients with suspicious smears, 22% are proved on biopsy to have carcinoma.

Table III shows the comparison of three of selected authors' data, with that of our own. Erickson has the largest series of all. Of 108,000 smears, he found 1,836 either positive or suspicious or 1.7%. Biopsies were obtained on 1,406. Of these, 786 proved to have carcinoma. Repeat smears the following year turned up a lower percentage, presumably because the first year had weeded out the majority of cancers, leaving only cases less than 12 months old.

SUMMARY

In the Texarkana area between January, 1956 and April, 1958, 1,496 Papanicolaou smears were examined, mainly on private patients. These have resulted in the detection of 12 histologically proved carcinomas, six invasive and six in situ. The cost is reasonable. It is suggested that the method is highly practical in private practice. The use of screeners enhances the value of the smears.

TABLE I  
Biopsies of Positive and Suspicious Smears  
Results of Smears

Ages	Patients with positive smears				Patients with suspicious smears			
	I	II	III	IV	I	II	III	IV
1-20	1		1		0			
21-34	1			1	3			3
35-40	1	1			5	1		4
41-44	0				4			4
45-50	1		1		3	1	1	1
51-60	0				1			1
61-70	1		1		2		1	1
Over 71	0				0			
Age unknown	11	3	1	7				
Totals	16	4	4	8	18	2	2	14

Column I: Number of patients with biopsies  
Columns II, III and IV, histological diagnoses;  
II: Carcinoma in situ  
III: Invasive carcinoma  
IV: No carcinoma proved

TABLE II  
SUMMARY OF BIOPSIED CASES

	A	B	C	D	E	F
Smear positive	16	4	4	8	0.54%	50%
Smear suspicious	18	2	2	15	0.27%	22%
Totals	34	6	6	23	0.83%	35%

Column A: Number of patients biopsied  
Column B: Number with histological diagnosis of carcinoma in situ  
Column C: Number with histological diagnosis of invasive carcinoma  
Column D: Carcinoma not proved histologically  
Column E: Percentage of total number of patients found to have carcinoma  
Column F: Percentage of biopsies with carcinoma



TABLE III  
COMPARISON WITH OTHER AUTHOR'S FINDINGS

ABNORMAL SMEARS		HISTOLOGICAL CARCINOMA						
Author	Cases	Pos.	Susp.	% Pos.	% Susp.	Biopsies	No. Pos.	% Pos.
Erickson (1)	108,000	1836		1.7		1406	786	0.8
Repeats	32,000	353		1.1		238	83	.26
Niebergs (2)	17,761			.66				.55
Repeat	4,482						15	.33
Birge and Carlson	7,577	585		7.7			82	1.08
Present series	1,469	26	112	1.77	7.7	34	12	.81

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# Breast Cancer

JEROME A. URBAN, M.D.\*

## I. THE IMPORTANCE OF EARLY DIAGNOSIS IN BREAST CANCER

The five-year salvage of primary operable breast cancer treated by radical mastectomy has doubled in the last fifty years. Most American clinics report a five-year salvage rate of about 55% as compared with Halstead's first published five-year salvage rate of 28.9% in 1907. Since the operative procedure has remained unchanged we attribute this improvement to earlier diagnosis which provides more patients free of systemic metastases at the time of definitive treatment. We firmly believe that a combination of early diagnosis and early appropriate surgical therapy are the most important controllable factors affecting the salvage of primary breast cancer.

A series of 800 cases of carcinoma of the breast treated by radical mastectomy who were first seen at Memorial Center between the years of 1945-48 have recently been studied regarding the clinical diagnosis, pathological findings and salvage rate. In brief, 10% of clinically benign lesions were proven to be carcinoma after local excision and frozen section examination. Of the 800 cases subjected to radical mastectomy 19% were not diagnosed clinically as carcinoma but rather as benign disease or as an equivocal diagnosis. In this same group of patients in whom carcinoma was found at the time of local excision and a radical mastectomy was then done, our five-year salvage rate was 74% as compared with a 49% five-year salvage rate in the remaining patients in whom carcinoma was diagnosed clinically prior to surgery. This increased salvage rate was particularly impressive in the group with positive axillary nodes. In the group which we could not diagnose as carcinoma clinically 58% of those with positive axillary nodes survived five years as compared with 37.5% in the group which were clinically apparent as carcinoma. This relatively high salvage rate in the former group can best be explained by the lower quantitative involvement of axillary nodes.

It seems obvious that any persistent, dominant mass in the breast even though it appears clinically benign should be excised for pathological examination. A significant number of these apparently benign lesions will prove to be early cancers. These same lesions will have a much better prognosis after early adequate treatment than the average clinical case of breast cancer. If in doubt—take it out!

## II. CLINICAL EXPERIENCE WITH RESECTION OF THE INTERNAL MAMMARY CHAIN FOR BREAST CANCER

Primary operable breast cancer metastasizes primarily to two lymph node depots—the axillary and the internal mammary chain. It has been demonstrated that lesions arising in the medial and central portions of the breast metastasize earlier and more frequently to the internal mammary nodes than do those presenting in the outer half of the breast. In 1951 we devised an original operative technique—Radical Mastectomy with En Bloc in Continuity Resection of the Internal Mammary Chain—in order to remove the primary breast cancer in continuity with both its primary lymph node depots. Since then this technique has been applied to 300 patients with only two postoperative deaths.

The internal mammary nodes are found in decreasing frequency as one goes from the first interspace to the fifth—91% in the first interspace, 89% in the second interspace, 75% in the third interspace, only 53% in the fourth interspace and dropping to 13% in the fifth interspace. Of 290 cases evaluated 44.8% showed all nodes negative, 47.6% showed axillary involvement while 35.6% showed internal mammary node involvement. In 7.6% only internal mammary nodes were involved. When the axillary nodes were negative 14.5% had positive internal mammary nodes. Twenty-two patients had involvement only of the internal mammary nodes.

Further analysis of the cases with positive internal mammary nodes discloses that the nodes lying medial to the inter-

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nal mammary blood vessels are more frequently involved than those involved lying lateral to these vessels. Of 95 cases evaluated 42% showed involvement on both sides of the blood vessels while 35% showed involvement medial to the blood vessels and 23% showed positive nodes lateral to these vessels. The most frequently involved interspace was the second and then in decreasing order the third, first and fourth.

In the first 270 cases operated upon the internal mammary nodes were positive in 58% of the overall group when the axillary nodes were positive. This rose to 60% in the medial lesions and dropped to 50% in the lateral lesions. On the other hand, if the axilla was negative the internal mammary nodes were positive in 15% of the overall group, 15.5% for the medial lesions and 12% for the lateral lesions.

This operative procedure was developed primarily in an effort to increase our salvage rate of breast cancer. Theoretically, en bloc removal of the primary tumor together with both the primary lymph node drainage depots should salvage a larger number of patients than could be salvaged by removing only the axillary nodes together with the primary tumor. We now have 70 patients with primary operable breast cancer who have undergone this procedure more than five years ago. In this group 58.5% had positive axillary nodes and 36% showed positive internal mammary nodes. The five-

year survival rate is 65.7% and the survival rate clinically free of disease is 61.4%. If these 70 cases were projected (according to the location of primary tumor and involvement of axillary nodes) on our baseline chart of the salvage of 1,000 primary operable breast cancers treated by radical mastectomy and postoperative x-ray therapy between 1944-46 we would have anticipated a five-year salvage rate clinically free of diseases of 47.8%.

In the first 70 cases analyzed for five-year salvage 25 patients had positive internal mammary nodes. In this group 10 patients survived five years for a 40% salvage rate and 8 patients survived five years clinically free of disease for a 32% salvage rate clinically free of disease. Seven of the patients surviving five years free of disease had metastatic nodes both in the internal mammary chain as well as the axilla. Only two of these received postoperative x-ray therapy to the base of the neck. Approximately one-third of the patients with positive internal mammary nodes can be salvaged with this procedure. We feel that this has resulted in approximately a 10% increase in salvage in the group undergoing this procedure as compared with similar material treated by the classical radical mastectomy operation. This operative procedure is a practical one and is particularly indicated for a primary operable breast cancer presenting in the medial and central portions of the breast.

# ♦ *What's* NEW ♦

## Tumors of the Mediastinum

SAM J. KUYKENDALL, M.D.\*

With the increasing popularity of routine radiographic chest surveys, more and more unsuspected mediastinal neoplasms are being discovered. Since the experience of each individual physician with these lesions is relatively small, and the lesions themselves often symptomless, a review of the current thoughts regarding the diagnosis and management of mediastinal tumors may be of value.

The mediastinum may be defined as the space between the two pleural cavities bounded by the sternum anteriorly, the vertebral column posteriorly, the thoracic outlet superiorly and the diaphragm inferiorly. The mediastinum may be arbitrarily divided into superior, anterior, middle and posterior portions for the convenience of classifying the more common tumors according to their usual location (Table 1). It will be noted that a great variety of tumors may arise in this portion of the body. This finding is not surprising in view of the multiplicity of tissues in and about the mediastinum.

Mediastinal tumors produce no uniform symptomatology, and physical examination is frequently unrewarding. Howev-

er, when clinical manifestations are present they may be of real value in determining the nature of the lesion. The most common symptoms and signs include: pain, dyspnea, dysphagia, cough, hoarseness, hemoptysis, Horner's syndrome, swelling of the neck, dilatation of the neck veins, pleural effusion and peripheral lymphadenopathy. Although physical examination is of great importance, the most useful diagnostic aid is the roentgenologic examination of the thorax. Mediastinal lesions frequently are first discovered on routine roentgenograms of the chest. Fluoroscopy of the thorax is helpful in determining pulsation of the mass, changes in configuration of the mass with changes in body position, movement of the mass on swallowing, fluid levels within cystic lesions and the choice of special positions and views for permanent roentgenographic records. Lateral and oblique roentgenologic projections, as well as tomography, are frequently helpful in determining the location and configuration of masses and in demonstrating the presence or absence of calcification and cavitation. A barium swallow may be of value in outlining pri-

TABLE I  
MEDIASTINAL TUMORS

ANTERIOR	SUPERIOR	POSTERIOR
Thymic tumors	Goiter	Neurogenic tumors
Teratoid tumors	Bronchogenic cyst	Miscellaneous:
Miscellaneous:	Aneurysm	Fibrosarcoma
Parathyroid adenoma	Miscellaneous:	Lymphoma
Lymphoma	Parathyroid adenoma	Goiter
Fibroma	Myxoma	Chondroma
Lipoma	Lymphoma	Myxoma
Lymphangioma		Paraganglioma
Vascular tumors	MIDDLE	Pheochromocytoma
Mesothelioma	Lymphoma	Mesothelioma
Chondroma	Pleuropericardial cyst	Meningocele
Rhabdomyosarcoma	Bronchogenic cyst	Gastroenteric cyst

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mary lesions of the esophagus and in demonstrating displacement of the esophagus by an extrinsic mass. Indirect laryngoscopy is indicated in all cases of hoarseness. Bronchoscopy and bronchography may assist greatly in differentiating intrapulmonary from extrapulmonary lesions. Angiography may be necessary to prove the presence or absence of aneurysms or other vascular lesions. If there are palpable cervical lymph nodes, they should be removed and examined histologically. Even if no such nodes are palpable, excision of the deep cervical fat pads occasionally will be rewarding in establishing a diagnosis. When other diagnostic aids fail to establish the etiology of a mediastinal mass, thoracotomy with biopsy, and removal of the tumor, if possible, is advisable. At the present time, thoracotomy for diagnosis carries little, if any, more risk than exploratory laparotomy.

The most frequently encountered masses in the mediastinum are diseased lymph nodes. These glands may be involved with primary malignancy, metastatic malignancy or granulomatous disease. Intrathoracic goiters and aneurysms of the aortic arch are the most common lesions which produce roentgenologic shadows in the superior mediastinum. Thymomas and teratomas show a predilection for the anterior compartment. Neurogenic tumors are the most common neoplasms located posteriorly.

#### SUPERIOR MEDIASTINAL TUMORS

*Intrathoracic Goiter.* Intrathoracic goiters are not true mediastinal tumors since usually they are derived from a cervical adenomatous goiter and have become displaced downward. A cervical component of the adenomatous goiter may be palpable, or a history of previous neck surgery for a nodular goiter may be elicited at times. Symptoms may be absent, but when present usually consist of dyspnea, dysphagia and recurrent laryngeal nerve paralysis due to pressure from the mass. Thyrotoxicosis may occur. Malignancy is unusual, but sudden hemorrhage into an adenoma may cause rapidly progressing pressure symptoms simulating malignant change. Tracheal com-

pression and calcification within the mass may be seen roentgenologically. Movement of the mass during swallowing is a characteristic sign fluoroscopically. Surgical removal is the recommended treatment in all cases if the general condition of the patient permits. Most tumors may be removed through a cervical approach. However, in some instances, a sternal splitting mediastinotomy will be necessary for adequate exposure.

*Aneurysms of the Aortic Arch and Its Branches.* Aneurysms, although not tumors in the true sense of the word, must be considered in the differential diagnosis of superior mediastinal masses. The aneurysms may be luetic, arteriosclerotic or mycotic in origin. They are more commonly saccular than fusiform in this location. Characteristically, they pulsate when viewed fluoroscopically but may not do so when they are partly filled with a thrombus. Calcification in the wall of an aneurysm is a helpful sign. Pain due to erosion of adjacent bony structures occurs at times. Retrograde aortography may be necessary to make the diagnosis. At the present time, only a few cases of successful surgical extirpation of aortic arch aneurysms have been reported.

*Bronchogenic Cysts.* Spherical, simple cysts lined with bronchial epithelium occur in the superior mediastinum (as well as in other areas in the thorax) and become symptomatic by compressing adjacent structures or by becoming infected. If the cyst communicates with the tracheobronchial tree an air-fluid level may be seen on the roentgenogram. Occasionally, such cysts may spill their fluid contents into the bronchial tree with resultant attacks of profuse expectoration. Simple excision is the treatment of choice.

Parathyroid adenomas, myxomas and lymphomas occasionally are found in the superior mediastinum. Other lesions which must be considered in the differential diagnosis are cystic hygromas, large pharyngoesophageal diverticula and cysts or duplications of the esophagus.

#### ANTERIOR MEDIASTINAL TUMORS

*Thymic Tumors.* Thymoma is one of the commonest neoplasms originating in the

mediastinum. Although thymomas may occur elsewhere within the mediastinum, they are most frequently located anteriorly and are best demonstrated in lateral roentgenologic projections of the thorax. They may be benign or malignant, cystic or solid. Benign tumors and early malignant ones may produce no symptoms. Malignant infiltration of adjacent structures eventually results in symptoms due to tracheal and superior vena caval obstruction. Distant metastases by way of the lymphatic channels and the blood stream may occur. The association between thymic tumors and myasthenia gravis gives rise to much debate in the medical literature. It has never been proved that thymomas cause myasthenia, and the results of thymectomy in cases of myasthenia are unpredictable. It is possible that the reverse may be true and that myasthenia may produce thymomas. In any event, complete surgical removal is the recommended treatment whenever a tumor is demonstrated. Irradiation is usually reserved for those tumors which are found to be unencapsulated at the time of surgery and in which there is doubt of complete surgical extirpation. Cortisone has a lympholytic effect and may produce temporary regression of thymic tumors.

*Teratoid Tumors.* The teratoid tumors are of embryonic origin and ordinarily are composed of all three germinal layers. The term "teratoid" is used to include dermoid cysts and teratomas collectively. They are usually spherical, vary greatly in size and may be cystic or solid. Teratoid tumors usually are found in young adults, presumably having remained dormant until the age of adolescence when acceleration of growth occurred. Occasionally, a teratoid tumor may rupture into the tracheobronchial tree resulting in expectoration of the contents of the tumor—an unpleasant experience, but the expectoration of hair and sebaceous material is pathognomonic. When rupture occurs into a bronchus, the mediastinum or the pleural cavity, infection and abscess formation frequently results. Bone and teeth are occasionally seen within the mass on roentgenograms. Surgical removal should be performed as soon as the lesion is found

since at least 15 per cent of the tumors are malignant.

Miscellaneous tumors which have been found in the anterior mediastinum include: parathyroid adenomas, lymphomas, fibromas, lipomas, lymphangiomas, vascular tumors, chondromas, rhabdomyosarcomas and mesotheliomas.

#### MIDDLE MEDIASTINAL TUMORS

*Lymphomas.* Lymphosarcoma, Hodgkin's disease, reticulum cell sarcoma and lymphatic leukemia are common causes of mediastinal lymph node enlargements. These neoplastic conditions must be distinguished from the frequently encountered benign lymph node enlargements due to granulomatous diseases such as tuberculosis, histoplasmosis and sarcoidosis. Fortunately, in all of these diseases of mediastinal lymph nodes there is frequently associated involvement of more superficial glands, making cervical lymph node biopsy a most helpful diagnostic procedure. It is uncommon to encounter a resectable lymphoma localized only to mediastinal glands, so irradiation is usually the preferred therapy. It is necessary to have a definitive diagnosis in all cases, and thoracotomy is indicated if other measures fail to establish the diagnosis. With the increased safety of exploratory thoracotomy, the earlier policy of "watchful waiting" for a change in appearance or behavior of mediastinal masses is unwarranted.

*Cysts.* Simple cysts lined with flattened endothelial cells and containing clear fluid, the so-called "spring water cysts" or pleuro-pericardial cysts, are encountered relatively frequently. These cysts usually occur just above the diaphragm along the right heart border, and the roentgenologic shadow characteristically changes in configuration with changes in position of the patient. The cysts are benign and asymptomatic. They should be removed primarily because of the difficulty in distinguishing them from more serious mediastinal tumors.

The middle mediastinum is a common location for bronchogenic cysts.

#### POSTERIOR MEDIASTINAL TUMORS

*Neurogenic Tumors.* Neurogenic tumors are one of the commonest, if not



the most common, groups of primary mediastinal tumors. In contradistinction to many types of mediastinal lesions this group of neoplasms is frequently symptomatic, pain and cough being predominant complaints. The majority are neurilemmomas, but neurofibromas, ganglioneuromas and neuroblastomas also occur. Strictly speaking, most of these neoplasms do not lie within the mediastinum since they arise extrapleurally from intercostal or sympathetic nerves and lie typically in the posterior gutter of the thorax. Neoplasms arising from the vagus, phrenic or recurrent laryngeal nerves may occur anywhere within the thoracic cavity. Occasionally, neurofibromas may originate near the spinal origin of an intercostal nerve and extend medially into the spinal canal and laterally into the thorax ("dumb-bell tumors"). Many patients with intercostal neurofibromas have other stigmas of von Recklinghausen's disease. Neurogenic tumors are removed because of their potential malignancy and their tendency to grow to large sizes and produce pressure symptoms.

Miscellaneous tumors that have been encountered in the posterior mediastinum include: fibrosarcomas, lymphomas, goiters, chondromas, myxomas, paragangliomas, pheochromocytomas, mesotheliomas, meningoceles and gastroenteric cysts.

#### SUMMARY

Mediastinal neoplasms are being discovered more often since routine radiographic chest surveys have become popular. The clinical manifestations frequently offer little help in determining the nature of the lesion. Fluoroscopy, special roentgenographic views, laryngoscopy, bronchoscopy, angiography and cervical lymph node biopsy may be useful diagnostic aids. However, exploratory thoracotomy with excision or biopsy of the mass has proved to be the most satisfactory method of establishing the diagnosis. With the exception of most of the primary malignancies of lymph nodes, for which surgery has little to offer, mediastinal neoplasms should be removed as soon as the diagnosis has been made.

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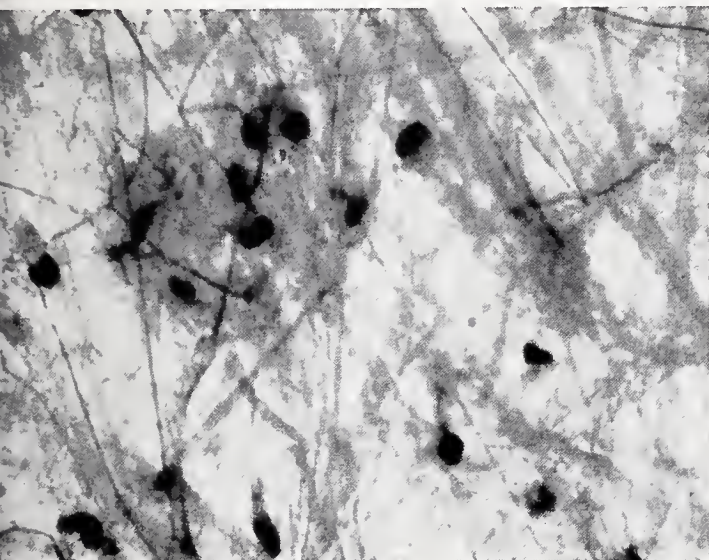
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## On the Clinical Aspects of Venous Pressure

JOHN A. PIERCE, M.D.\*

### INTRODUCTION

Recent advances in the physiology of the circulation make it worthwhile to reconsider certain practical aspects of venous pressure at this time. An improved understanding may result in a more effective clinical use of venous pressure. The elevation of venous pressure which commonly occurs in patients with congestive heart failure has recently been attributed to an increase in venous tone.<sup>(1)</sup> The purpose of this report is to review the evidence for such a concept, and to point out other pertinent features about the venous circulation.

### NORMAL PHYSIOLOGY (2)

It has been estimated that approximately 55% of the total blood volume may be found in the veins at any one time. Blood enters the small veins under the pressure originally imparted by left ventricular systole (*vis a tergo*). The head of pressure is small after the blood has traversed the capillaries, and decreases further as the blood approaches the heart.

It seems unlikely that an efficient venous circulation could be maintained if the return of blood to the heart were entirely dependent upon the pressure in the small veins. Perhaps most significant among the several factors which aid venous return is the unidirectional nature of the flow. This is accomplished by several types of strategically placed valves. Although the force of gravity favors venous return from the head and neck in the upright subject, it retards venous return from the lower extremities. It may be noted that the distance from the right atrial level to the floor in a man of average size is 130 cm. A continuous column of blood this length would exert

a pressure of approximately 137 cm. of saline (or 102 mm Hg.). If there were no venous valves, then this would be the minimal venous pressure in the foot while standing. Obviously if the valves prevent retrograde flow, this long column of blood can be interrupted and the static gravitational pressure correspondingly reduced. It should be noted that although the veins have thin walls, they are capable of withstanding very large intraluminal pressures without rupture.

With venous valves located near the entrance to and exit from skeletal muscles, one finds an extremely efficient mechanism for the propulsion of blood. As the muscle contracts, blood is pressed into the proximal vein. When the muscle relaxes, the proximal venous valve closes and intramuscular venous pressure falls below the distal venous pressure. Hence, blood passes into the veins in the body of the muscles. This has been referred to as the "muscle pump." Other factors which promote venous return include the intrathoracic pressure which is less than atmospheric pressure, and the rhythmic contractions of the diaphragm. The latter effects movement of the blood toward the heart by a pumping action on the inferior vena cava.

The factors which influence local venous pressure are a) the potential volume of the veins, b) the volume of blood in the veins, c) venous tone and d) the balance of blood flow into or away from the region. Tone may be conveniently thought of as the tension in the wall of the vein. This tension reflects the level of activity or state of contraction of the smooth muscle in the vein wall. It is apparent that under certain circumstances an increase in venous tone may actually increase the capacity of a vessel by vir-

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tue of converting it from an elliptical to a circular configuration. In general, however, an increase in venomotor activity or tone results in a rise in venous pressure.

Although the potential vascular volume of the veins is ordinarily greater than the volume of contained blood, the pressure is normally controlled within a narrow range. For instance, a healthy adult subject can withstand the rapid removal of 500 cc of blood with very little change in venous pressure. By the same token, 500 cc of blood can be infused without any lasting effect on the venous pressure. It is apparent that within definite limits, the venous system has the ability to compensate for changes in intravascular volume. Normal venous pressure varies between 5 and 15 cm. of saline. It may be slightly higher in the lower extremities.

In the healthy subject, exercise produces a rise of 2 to 5 cm. of saline in venous pressure. Hyperventilation reduces venous pressure while hypoventilation increases it. Adrenalin and noradrenalin elevate the venous pressure by stimulating smooth muscle contraction while hexamethonium and acetylcholine decrease venous pressure by diminishing venomotor activity. The level of smooth muscle activity in the veins is mediated mainly through the sympathetic nervous system. It seems likely, however, that humoral factors and perhaps even pressure or volume receptors also play a role in the regulation of venomotor activity.

There are numerous animal experiments which serve to indicate the complexity of the visco-elastic properties of the veins. (3) Remington has shown that differences in venous distensibility depend to an extent upon the degree of venomotor activity. Following severe hemorrhage venous pressure is reduced while venous tone is markedly increased. (4) A word of caution is indicated therefore, that simple measurements of venous pressure do not reflect accurately venous tone in all instances. Moreover, there occurs in certain situations a dissociation of normal venomotor relationships between small and large veins. Hence it is possible that small vein pressure may be elevated while large vein pressure is normal or even reduced.

## METHODS (5)

The most expedient method of assessing venous pressure is by inspection. In general, if the external jugular veins are distended above the level of the manubrium with the patient in a semi-sitting position, the venous pressure is elevated. Some examiners prefer to view the veins of the hand during gradual elevation of the arm. The level at which collapse occurs corresponds roughly to the venous pressure. When the superficial veins under the tongue are distended in a patient sitting upright, venous hypertension is usually marked (greater than 20 cm. of saline). The veins should always be inspected, but unfortunately one cannot rely completely on this for the assessment of venous pressure since errors are likely to occur.

Much confusion existed early in the direct performance of venous pressure measurements because of difficulties in locating a reference or zero level. There was general agreement that the proper reference level was that of the right atrium. Moritz and Tabora (6) recommended a level five centimeters posterior to the junction of the fourth costal cartilage with the sternum. Taylor, Thomas and Schleiter (7) suggested a level one-half of the distance from the posterior to the anterior surface of the chest in the supine patient. Lyons, Kennedy and Burwell (8) concluded from anatomic and roentgenographic studies that a distance ten centimeters above the surface of the table supporting the supine patient more accurately approximated the level of the right atrium. Their recommendations have been accepted and are in general use.

The measurement of venous pressure is most satisfactorily performed with a 19 gauge needle. A three way stopcock, an open manometer tube and sterile normal saline or citrate are the only other essential items. The saline is introduced into the manometer tube slightly above the expected level of venous pressure. This prevents an initial reflux of blood into the manometer system. It is of the utmost importance that the patient be at rest for several minutes in the supine position prior to the venipuncture and remain relaxed during the entire procedure. Clos-

ure of the glottis should be avoided by asking the patient to breathe quietly with his mouth open. Venipuncture should be performed without a tourniquet if possible. Proper positioning of the needle is evident from the slight fluctuations in pressure which occur with each heart beat and each respiratory excursion. The venous pressure reading is obtained when the fluid in the manometer reaches a stable level. At this point, any of several maneuvers can be employed to obtain additional information. These maneuvers include exercise, elevation of the legs, the Valsalva maneuver or pressure applied in the region of the liver.

The most useful of these techniques is the latter, that is, the hepato-jugular reflux phenomenon. This is performed by exerting approximately 25 pounds of pressure over the right upper quadrant for one minute. During this period the examiner must be certain that the patient does not close the glottis. At the end of the minute another manometer reading is obtained. If a rise in pressure is observed, additional readings should be made to insure that the pressure returns to its control level. It is convenient following this procedure to measure the circulation time.

One minor source of error with the open manometer is capillarity. This is the height of the fluid due entirely to the surface tension of the fluid. The early workers recommended the use of a tubing with an internal diameter of 4 mm. This minimized capillarity to roughly 0.6 cm. With the introduction in many hospitals of standard spinal fluid manometers which have only a 2 mm interval diameter, the height of the fluid due to capillarity becomes 1.3 cm. This error is unimportant unless the venous pressure is only slightly elevated.

The phlebomanometer of Burch and Winsor (2) deserves mention. This instrument operates in a manner similar to an ordinary sphygmomanometer. Inasmuch as the venous pressure measurements are made under static conditions, a 25 or 26 gauge needle is sufficiently large for use with citrate solution. For this reason, these instruments have found some favor in pediatric practice.

#### PATHOLOGIC PHYSIOLOGY

Venous hypertension has been known to occur in patients with congestive heart failure for many years. In these patients, venous pressure usually exceeds 20 cm. of saline. Some of the highest pressures are seen with chronic constrictive pericarditis where the level may be 40 cm. of saline or more. Curiously enough all patients with congestive heart failure do not exhibit venous hypertension at all times. It was formerly thought that venous hypertension resulted from an accumulation of blood behind the heart. This idea considered the failing heart somewhat as an obstruction to the flow of blood. Later, from the work of Warren and Stead (9) it was suggested that the veins were overdistended by virtue of an increase in the total blood volume. Careful measurements in a large series of patients (10) have shown that the total blood volume in congestive heart failure is moderately increased.

The idea that venous tone is an important factor in the production of venous hypertension during congestive heart failure is an old one. In patients with congestive heart failure venous pressure falls precipitously following the intravenous injection of hexamethonium. This occurs without any marked change in systemic arterial pressure. Burch (1) suggests that this is evidence for an increased venous tone inasmuch as vessels that were simply overdistended would not be expected to respond in this manner. This experiment does not, however, seem conclusive by itself. Venous pressure has been reported to decrease somewhat during sleep in patients with congestive heart failure. (11)

Burch (1) further demonstrated that during congestive heart failure the venous reservoirs in the finger tip fail to accommodate an increased volume of blood without an inordinate rise in pressure as compared to healthy persons. Wood, Litter and Wilkins (12) studied distensibility of the forearm veins with a water-filled plethysmograph. They observed striking differences between normal subjects and patients with congestive heart failure. Venous distensibility was markedly reduced when heart failure ex-



isted whether the venous pressure was elevated or not. In patients with diseases of the heart who did not have congestive heart failure, the venous distensibility was normal.

The mechanism of the rise in systemic venous pressure during the hepato-jugular reflux phenomenon is of interest. Hitzig (13) demonstrated that in healthy subjects the forearm venous pressure usually falls or remains unchanged during hepatic pressure. During congestive heart failure, however, the usual response to hepatic pressure is an increase in venous pressure of more than 2 cm. of saline. The pressure on the liver occludes the inferior vena cava. It has been considered that blood was moved in a retrograde fashion into the neck veins. This idea seemed plausible inasmuch as one might manually express several ounces of blood from a congested liver, but not from the liver of a healthy person. Thus, the pumping action of the right ventricle was thought to be under test by the volume of blood expressed from the liver. The importance of this mechanism remains uncertain at the present time. Burch and Murtadha (14) studied pressures in a segment of forearm vein which was isolated by occlusion. The pressure within the occluded segment exceeded that in the surrounding veins. In patients with congestive heart failure, hepatic pressure caused a rise in the pressure of the occluded segment. Release of the hepatic pressure caused the occluded segment pressure to return to its control level. It seems unlikely that this response could have occurred from any mechanism other than an active muscular contraction within the vein wall, that is, an increased venous tone. The authors postulated that this response was mediated through the sympathetic nervous system.

Just why hepatic pressure should alter systemic venous tone remains uncertain. The fact that patients with congestive heart failure exhibit a different response from healthy subjects could be related to the resting level of venomotor activity or other factors. It would be unwise to ignore the blood volume changes which occur in congestive heart failure. It can be seen that many facts remain obscure, but the

evidence seems to leave little doubt that venous tone is markedly altered during congestive heart failure.

Conditions other than congestive heart failure deserve attention (5). Venous pressure is markedly reduced during shock. A comparison of upper and lower extremity venous pressures can serve to confirm a diagnosis of the superior vena caval syndrome. Here, the arm venous pressure is markedly elevated while the pressure in the legs remains normal. Conditions which result in markedly elevated intra-abdominal pressures cause an opposite effect, that is an increased leg venous pressure with normal pressure in the arms. This finding has also been used to confirm the presence of liver abscess (5). Obviously, thrombosis or any other venous obstruction will result in a rise in venous pressure distal to the obstruction. Venous pressure is regularly elevated in the region of a systemic arteriovenous fistula.

#### RECENT PROGRESS

The development by Haddy, Richards and Visscher (15) of a technic for the simultaneous measurement of small and large vessel pressures has provided exciting new data. Their experimental preparation is the dog forelimb with constant flow maintained by a pump. By threading very tiny plastic catheters into the small vessels, pressure can be measured through side connecting anastomatic channels. With constant flow, the intravascular pressure reflects vascular resistance. Haddy and several associates (16-19) have pursued this technique through a number of experiments. One of their most interesting results concerns the action of serotonin. They found that serotonin did not alter total vascular resistance, but increased large artery and sometimes large vein resistance. Curiously enough, however, small vessel resistance was decreased by serotonin. It has been suggested that an action such as this might account for the changes in skin color which have been observed in patients with malignant carcinoid.

An observation important to clinical medicine was made with this technique by Stead and Wallace (20). They demonstrated the independence of small and

large vascular resistances in healthy subjects. In response to cold stimulation a rise in small vein pressure occurred with very little change in large vein pressure. It is obvious then, that the measurement of large vein pressure does not necessarily reflect the pressure in the small veins. Stead and Wallace feel that the best clinical index to small vein pressure is probably skin color.

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# What Is Your Diagnosis?



**FOR ANSWER SEE PAGE 508**

# Arkansas Public Health at a Glance\*

## CUTANEOUS HUMAN ANTHRAX 1958



## REPORTED ANIMAL ANTHRAX

An outbreak of anthrax of considerable magnitude was experienced in livestock in eastern and southeastern Arkansas during the summer and early fall of 1958. The excessive winter and spring rains had created extensive flood conditions for weeks in a wide area of Arkansas which comprises the lower watershed of the Ouachita, Saline, Arkansas, White, Cache, L'Anguille, and St. Francis Rivers. These streams, together with their tributaries, flow through an area in eastern and southeastern Arkansas which is known to be endemic for anthrax.

In June 1958, anthrax was reported in cattle, equines and swine in seven counties and on 62 premises. The State Veterinarian of the Livestock Sanitary Board and the Federal Animal Disease Eradication Service had moved into the area and were establishing a premise quarantine of each farm or plantation where anthrax

had been diagnosed in livestock. The peak of this particular outbreak of anthrax was reached by the end of July when it was reported in 13 counties and on 65 additional premises.

Four cases of cutaneous human anthrax were reported during July, 1958. These were followed by two more cases in August, and the seventh case of 1958 occurred in November. These cases were found in Desha, Chicot, Monroe, and Jefferson Counties. These are in the same eastern and southeastern area known to be endemic for anthrax. Four of the cases were under fourteen years of age.

The fact that seven cases of cutaneous human anthrax were reported during 1958 is particularly important when it is known that there have been only three cases in the previous ten years. The previous cases had been one each year in 1957, 1951 and 1950.

\*Sponsored by Arkansas State Board of Health.



## Handling the Injured

R. B. ROBINS, M.D., F.A.C.S.\*

In this machine age there are millions of accidents with thousands of deaths each year. Some of these deaths occur because of bad handling of the victim at the scene of the accident. Ambulance drivers and attendants certainly need special training in first aid management of the injured and all laymen need to have basic training in first aid care.

County medical societies should be urged to sponsor special educational programs for ambulance attendants. Medical societies need to pursue a continuous campaign on this subject by furnishing speakers to civic clubs and other organizations on management of the injured. Public schools should be urged to give more training to the youth on this subject. County medical societies can aid the Red Cross greatly in promoting more of their first aid courses for people. This program ties in perfectly with the potential civil defense needs of this country, too.

Immediate attention to create an open airway for breathing, to stop hemorrhage, to prevent the increase of shock and to prevent broken bones from causing further damage to the soft parts is necessary at the scene of accident before moving the patient. Basic knowledge as to how to do this is needed by ambulance attendants and laymen. Nonobservance of traffic regulations and excessive speed on the

part of ambulances may result in catastrophe to other people as well as to the injured individual who is the passenger.

This subject includes many facets such as procedures at the scene of accident, identification, care of patients in shock, hemorrhage, acute respiratory emergencies and resuscitation, the care of burned patients, emergency splinting of fractures, common medical emergencies, care for emergency births, care of mentally disturbed patients and proper procedures in handling the dead, as well as many other subjects. It also includes basic equipment needed in the ambulance such as oxygen, suction apparatus, sterile dressings, splints, etc.

Attention to this matter is lacking in many communities, but there are some communities that have ordinances governing the qualifications of ambulance attendants, regulating equipment to be used in first-aid treatment by such attendants, and providing penalties for violation. The idea of state laws on this problem is probably a matter for contemplation.

The education of ambulance attendants and laymen in the care of the injured is a project deserving enthusiastic consideration by medical societies everywhere, as well as the National Safety Council. Ask yourself the question: "What is the situation in my own community?"

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\*Camden, Arkansas.

## Medicine in the News

### First National Youth Conference On Atom Announced

A national Youth Conference on the Atom, the first such meeting of high school science students and teachers to discuss the peaceful uses of nuclear energy, will be held in Atlantic City, N. J., April 30-May 1.

Approximately 500 junior and senior high school science students and teachers will be sponsored in attendance at the conference by 60 or more electric utility companies throughout the country.

### Medicare Costing About \$93 Million, \$21 Million Over 'Limit'

The civilian phase of Medicare will cost between \$90 and \$93.6 million for the current fiscal year ending on June 30, or \$21 million more than Congress approved. When Congress last year cut Medicare's civilian funds to \$72 million, the conference report instructed that no more than this amount be spent. However, because the restriction was not written into the law but was merely a recommendation by Congress, Army and Air Force are able to shift funds from other accounts to make up for Medicare's shortages. Navy, however, will have to submit to Congress a deficiency appropriation for about \$6 million. The \$93.6 million figures for the current year's cost was disclosed in the budget, which also requested \$89 million for next fiscal year. Subsequently, Army Surgeon General Silas Hays, representing all services, told the committee that the Navy would ask the extra \$6 million, and that the other two services would absorb their own shortages in Medicare funds.

### Roberts of Alabama Heads House Health-Safety Subcommittee

Rep. Kenneth A. Roberts (D., Ala.) has been named chairman of the Interstate Committee's health and safety subcommittee, which handles a large portion of health legislation in the House. This in-

cludes public health and quarantine, food and drugs, hospital construction, safety, including highway traffic safety, air safety and air pollution.

### Civil Air Surgeon's Hand Strengthened

The first order of the new Federal Aviation Agency strengthens the authority of FAA's Civil Air Surgeon. He will (a) assist the administrator in setting standards for fitness of airmen and others, (b) direct examination, inspection and certifications programs, (c) advise the administrator on needs in civil aviation research, and (d) evaluate FAA's medical personnel programs.

### 54 Senators Sponsor Int'l Health And Medical Research Act

One of the first bills for the newly formed health subcommittee of the Senate Labor Committee to dig into is S. J. Res. 41, sponsored by 54 Democratic and Republican Senators. It provides for (1) a national institute for international medical research as part of the National Institutes of Health, (2) a national advisory council, (3) \$50 million annually for research under supervision of NIH.

Senator Hill, a leader in pushing this measure, told the Senate it was designed (1) to encourage and support planning of essential research on a world-wide basis, (2) to encourage and support coordination of medical and medically-related experiments and research in the U. S. with complementary programs abroad, (3) to encourage and support training of specialized research personnel, and (4) to support specific research projects and experiments, and (5) to encourage and support rapid informational interchange of medical knowledge on diseases and disabilities.

### House Committee Approves Bill Extending Doctor Draft

House Armed Services Committee recently cleared legislation for a four-year extension of the regular draft act and with it the doctor draft, and sent the bill on to the House where action is imminent. Without an extension, both provisions would expire next June 30.



At the hearing, representatives of the military services testified that without the compulsion of the draft laws there would not be enough volunteers to maintain the armed forces and their medical departments. Under the act, doctors who have obtained an educational deferment are subject to call up to age 35, whereas other registrants are free of obligation after age 26.

### **Senate Orders Year's Study Of Problems of the Aged**

A new subcommittee of Senate Labor and Public Welfare Committee has come into being and it plans a year-long inquiry into matters involving the country's aged population. In a surprise move, the full committee voted to set up the subcommittee on Problems of the Aged and Aging, in addition to such subcommittees as Health and Veterans Affairs. Heading the study group is Senator Pat McNamara (D., Mich.). Other Democratic members are Senators John Kennedy of Mass., Joseph Clark of Penna., Jennings Randolph of W. Va. Republican members are Senators Everett Dirksen of Illinois, who is Senate Minority Leader, and Barry Goldwater of Ariz.

### **Deductions in OASDI Payments Proposed for Health Insurance**

The American Association of Retired Persons, a nonprofit organization that has pioneered in promoting health insurance for those past 65 years, now is proposing that the Social Security Administration be authorized to make deductions from monthly retirement payments to finance health insurance protection for the aged. A pool of commercial insurance companies or Blue Cross-Blue Shield would underwrite the insurance.

### **Medical Schools Would Share in New Aid**

The administration unfolded a plan for stimulating colleges and universities, including medical schools, to build under a 20-year, \$500 million program. It would work this way: public colleges and uni-

versities, which can market tax-exempt bonds, would be offered grants equal to one-fourth the cost of construction, spread over the 20 years the loan was being repaid; private institutions would have their loans guaranteed by the government, resulting in a lower interest rate, in addition to receiving the same grant benefits. A current program for medical schools and other institutions is the laboratory research facilities act which distributes \$30 million a year for building research facilities looking into crippling and killing diseases. None of this money can be used for teaching facilities. Still under study in the administration is a grant program for construction of medical school teaching facilities.

### **Senate Passes Housing Bill With Nursing Home Loan Guarantees**

The Senate passed the Housing bill carrying authority for the guarantee of nursing home mortgages, a provision actively supported by the American Medical Association and the American Association of Nursing Homes.

Just prior to the final vote, an amendment by Senator John J. Sparkman (D., Ala.) was adopted. It permits a nursing home operator whose application has been turned down by the state Hill-Burton authorities to appeal to the FHA commissioner. As reported out by the Senate Banking and Currency Committee, the measure would deny loan guarantees to a nursing home applicant unless the Hill-Burton authorities decided the institution was needed in the particular community. The AMA supports full FHA control without mandatory supervision from HEW and the Hill-Burton organization.

Also revised by the committee was the definition of a nursing home. Under the language now in the bill, the home would have to be a proprietary facility for the accommodation of convalescents or others not acutely ill and not in need of hospital care, "but who require skilled nursing and medical services . . . prescribed by or performed under the general direction of persons licensed to perform such care and services. . ."

## Senators on Health Subcommittee Propose Two-Year Study

Senators Javits (N. Y.), Case (N. J.) and Cooper (Ky.), Republican members of the health subcommittee of Senate Labor Committee, are sponsoring a measure (S. J. Res. 43) for a two-year study of the health needs of all citizens. The 15-man commission would recommend to the President and to Congress necessary legislation to supplement or stimulate broader health protection coverage by existing private and non-profit programs. The commission, made up of three public and 12 non-governmental members, would examine the following areas:

1. The adequacy of existing programs of health insurance and group or cooperative health plans in meeting overall health service needs; 2. Necessity for extending health insurance coverage to provide adequately for retired or elderly persons, those temporarily unemployed, and those suffering from mental illness; 3. Problems experienced by the aged, members of racial or other minority groups and residents of rural areas in securing health insurance; 4. The effect which expanded coverage of such plans would have upon the adequacy of the existing number and distribution of health personnel and facilities.

## Keogh Bill Out of Committee, Now Awaits House Action

The Keogh-Simpson bill was favorably approved by the House Ways and Means Committee and the way cleared for early floor action. As it emerged from Committee, there were no amendments, thus the bill is identical with the version that passed the House last year and died in the Senate.

The Bill would allow the self-employed, including doctors, to set aside 10 per cent of gross adjusted income up to \$2,500 when paid into retirement plans. Maximum set aside in any lifetime would be \$50,000. Leader in the campaign for enactment is the American Thrift Assembly, of which the American Medical Association is a member.

One plan under discussion is for the bill to come up for floor action on sus-

pension-of-the-rules day (first and third Mondays). The bill would not be subject to amendment from the floor. Twenty minutes of debate is allowed each side, and a two-thirds vote of those present is necessary for passage. Some House members, particularly the new Congressmen, may want to be heard on the bill before it heads once again for the Senate.

In the Senate, meanwhile, the bill is gaining new supporters, giving hope that it may be acted on in that body this session.

## 'Report to Nation' On Heart Disease

A new device is being used to stimulate interest in heart and blood vessel disease research. Recently the National Heart Institute and the American Heart Association jointly sponsored a "Report to the Nation" in these areas of research. The project was arranged at the request of Senator Lister Hill (D., Ala.) and Rep. John E. Fogarty (D., R.I.), who head the Senate and House subcommittees that handle medical research funds. Members of both houses of Congress were invited, as well as the general public. The session was at the Department of Commerce auditorium. Taking part were Drs. Howard B. Sprague, Paul Dudley White, and Robert W. Wilkins, all of Boston; Irvine H. Page, Cleveland; Michael E. DeBakey, Houston; and Robert W. Berliner, Bethesda, Md.

## Goodwill Hospital Ship To Visit Southeast Asia

An exchange of correspondence between President Eisenhower and Dr. William Walsh, a practicing physician and president of the People-to-People Health Foundation, has formally launched a voluntary effort by doctors to spread goodwill in critical Southeast Asia through dispatch of a World War II hospital ship. Under the project, a staff of specialists recruited from among U. S. physicians and other medical personnel would be prepared to treat patients, to move into epidemic areas, and to conduct seminars with Far East doctors on modern methods of medical school training.



Dr. Hugh Hussey, dean of Georgetown University School of Medicine, and an AMA trustee, heads a curriculum committee.

The ship, the *Consolation*, is coming out of mothballs and will be loaned to the foundation; it will be away for a year. Rotating teams will fly out every three months. The AMA trustees have endorsed the plan and also made a cash contribution for initial organizing expenses. It is estimated that it will cost \$3.5 million to outfit and run the ship for a year; funds will be sought from private sources. The President, who first proposed more people-to-people contacts with other countries, said the project was a "wonderful thing" and he knew of no better way to serve the needs of humanity.

### **Forand Introduces Hospitalization-Surgical Services Bill for Aged**

The 1959 version of the proposal to use the social security system to provide hospitalization and surgical services for those eligible for OASI benefits was introduced in the House by Rep. Aime Forand (D., R.I.) on February 18. The bill (H. R. 4700) differs with his 1957 bill in several points. They include permitting surgical services to be performed by other than board-certified members. To finance the program, he would increase social security taxes, above increases already planned, by  $\frac{1}{4}$  of 1 per cent for both employee and employer and  $\frac{3}{8}$  of 1 per cent for the self-employed starting in 1960.

Mr. Forand conceded that among the strongest backers of his original bill, "there are some who question the feasibility of including surgical benefits at this time. This is one of the matters which the committee will want to weigh as it hears testimony." He said he intends to explore the possibility of (1) paying for diagnostic services, such as X-rays and laboratory tests, on an out-patient basis, and (2) including benefits for home nursing care through responsible agencies as visiting nurses associations, hospitals or local health departments.

He commented further: "The AHA has recognized the need for some type of fed-

eral action and has been exploring alternatives . . . The American Medical Association has also acknowledged the need for vigorous action along new lines and urged its member societies to explore and support private programs that will help to avoid federal legislation."

The First Annual Meeting of the South Central Association of Blood Banks was held February 6 and 7, 1959, at the Driskill Hotel, in Austin, Texas. The South Central Association was formerly the Texas Association of Blood Banks, but the scope of the Association was enlarged last year to include the States of Arkansas, Louisiana, Mississippi, New Mexico, and Oklahoma. District Director for the State of Arkansas is Dr. Albert S. Koenig of Fort Smith.

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## **ANNOUNCEMENTS**

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### **Third Annual Postgraduate Course in Geriatric Medicine**

Washington University School of Medicine, Division of Gerontology, will conduct its Third Annual Postgraduate Course in Geriatric Medicine, with special emphasis on heart disease and the psychosocial problems of later life, in St. Louis, Missouri, May 21, 22 and 23, 1959. This course will feature outstanding speakers from the St. Louis area and several authorities in the field of geriatrics from other universities. Clinical application of the basic principles of disease in later life will be stressed. The course is tuition-free and Category I credit will be granted to members of the American Academy of General Practice.

For further information address: Division of Gerontology, Washington University School of Medicine, 5600 Arsenal Street, St. Louis 9, Mo.

### **The American Goiter Association**

The 1959 meeting of the American Goiter Association will be held in the Drake Hotel, Chicago, Illinois, on April 30, May 1 and 2. The program for the three day meeting will consist of papers and discussion dealing with the thyroid gland,

its physiology, pharmacology, pathology and therapy.

### **Rocky Mountain Cancer Conference**

The 13th Annual Rocky Mountain Cancer Conference, sponsored by the Colorado State Medical Society and Colorado Division of the American Cancer Society, has been scheduled for July 22 and 23, 1959, at the Brown Palace Hotel in Denver.

### **Conference on Mental Retardation**

Announcement has been made of the First International Medical Conference on Mental Retardation, to be held at the Eastland Hotel, Portland, Maine, July 27 through 31, 1959.

### **American Board of Obstetrics And Gynecology**

Part II Examinations of the American Board of Obstetrics and Gynecology will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board from May 8 through 19, 1959. Notice of the time of each candidate's examination will be sent him in advance.

The deadline date for the receipt of new and reopened applications for the 1960 examinations is August 1, 1959.

### **Refresher Courses in Pediatrics**

A Series of Short Refresher Courses will be given during May and June 1959, by the Children's Hospital of Philadelphia and by the Graduate School of Medicine, University of Pennsylvania.

1. PEDIATRIC ADVANCES. May 25 through 29, 1959. Conducted by the Staff of The Children's Hospital of Philadelphia. The curriculum will consist of clinics, demonstrations and panel discussions in selected aspects of contemporary pediatrics in which important advances are being made. NOTE: Interested physicians are urged to apply early, since total attendance is limited. Registration fee will be refunded if the registrant later finds it impossible to attend. TUITION: \$115.00.

2. PRACTICAL PEDIATRIC HEMATOLOGY. June 1 through 5, 1959. Conducted by Irving J. Wolman, M. D., Thomas R. Boggs, Jr., M.D. and other members of the Hematology Department of the

Children's Hospital of Philadelphia. TUITION: \$125.00. The program on June 4 and 5 will be devoted to Problems of Blood Grouping, Neonatal Jaundice, Kernicterus and Exchange Transfusions. Physicians may register for these 2 days only, if desired. TUITION: \$50.00. An illustrative collection of 25 abnormal blood and bone marrow slides has been prepared. These are available for purchase: \$10.00 for registrants; \$15.00 for non-registrants.

## **New Members . . .**

**Dr. Patricia Ann O'Connor**, Pediatric Consultant, Arkansas State Board of Health, has been accepted for membership in the Pulaski County Medical Society. Dr. O'Connor was born at Detroit, Michigan, and was graduated from the University of Michigan in 1949. Her M.D. degree was obtained at the University of Michigan Medical School in 1953.

**Dr. Philip P. Ellis**, Associate Professor and Head of the Division of Ophthalmology of Arkansas School of Medicine, has been accepted for membership in the Pulaski County Medical Society. Dr. Ellis was born at Saginaw, Michigan and attended the Western Michigan College at Kalamazoo. His M.D. degree was received at Baylor University, Houston, Tex., in 1948. Before moving to Little Rock, Dr. Ellis practiced in Iowa City, Iowa from 1954 to 1958.

**Dr. W. R. Brooksher, Jr.** has been accepted for membership in the Pulaski County Medical Society. A native of Fort Smith, Arkansas, Dr. Brooksher received a B.S. degree from the University of Arkansas at Fayetteville in 1954 and an M.D. degree from the University Medical School in Little Rock in 1958. Dr. Brooksher is now interning at the University Hospital, Little Rock.

A new member of the Pulaski County Medical Society is **Dr. William W. Abbott**. Dr. Abbott was born in Hampton, Arkansas and received his preliminary education at Ouachita College at Arkadel-



phia, Arkansas. His M.D. degree was received from the University of Arkansas School of Medicine in 1950. Dr. Abbott is an anesthesiologist at St. Vincent's Hospital, Little Rock.

A new member of the Bradley County Medical Society is **Dr. W. D. Robertson**, 205 East Church Street, Warren, Arkansas. Dr. Robertson was born in Marshalltown, Iowa, and received his preliminary education at Henderson State Teachers College at Arkadelphia. His M.D. degree was received from the University of Arkansas School of Medicine at Little Rock, August 1, 1955. Dr. Robertson entered General Practice at the above mentioned address.

**Dr. Eldon L. Caffery** has been accepted for membership in the Craighead-Poinsett County Medical Society. He is a native of Athensville, Illinois. His M.D. degree was received from the University of Tennessee College of Medicine in 1947. Dr. Caffery is a Urologist, with his office at 812 Cobb Street, Jonesboro, Arkansas.

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## Obituary

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Dr. Stephen M. Graves, 88, one of Arkansas' oldest practicing physicians, died at his home in Clarksville. He would have observed his 60th anniversary in the medical profession March 15.

Born in Tennessee, Dr. Graves had lived in Johnson County since childhood. He practiced medicine at Mt. Levi many years before moving to Clarksville about fifteen years ago. Dr. Graves was a member of the Church of Christ, and the Johnson County Medical Society, Arkansas Medical Society, and American Medical Association. He was also a Mason, a Shriner and a member of the Consistory.

Survivors include two sons, Nelson and Howard, six daughters, Mrs. Annie Johnson, Mrs. Velna Bean, Mrs. Narcissus Chronister, Mrs. May Lund, Mrs. Edith Pitts, and Mrs. Rena Martin; one brother; thirty-three grandchildren; eighty

great-grandchildren; and five great-great-grandchildren.

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Dr. Quince Rudolph Galloway, 87, died January 29, 1959, at the home of his oldest son in Livermore, California. Dr. Galloway retired three years ago after practicing medicine in Alma and Crawford County, Arkansas, for 55 years. He was born January 17, 1872, in South Carolina, and came to Crawford County at the age of seven. He attended Hendrix College, alternately going to college and teaching school to pay for his education. After his graduation from Hendrix he received his medical training at the University of Tennessee Medical School, then did post-graduate work at Tulane in New Orleans. Dr. Galloway was a member of the Alma Methodist Society, the Crawford County Medical Society, the Arkansas Medical Society, and the American Medical Society. He took part in Masonic Lodge work and was a member of the Alma Lions Club.

Dr. Galloway is survived by his wife, the former Mary S. Bushmiaer, three sons, Quince R., Jr., Dwight, and Wayne; two daughters, Mrs. Ruth Taylor and Mrs. Irene Blaylock; three brothers and one sister, eleven grandchildren and one great grandchild.

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## PERSONALS AND NEWS ITEMS

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**Dr. Joe Shuffield**, Little Rock, has been named by the Governor to a six-year term on the board of trustees for the Arkansas State Hospital.

Opening of the A N L Medical Laboratory at Fayetteville, Arkansas, was recently announced by **Dr. Mae B. Nettleship**, Pathologist.

**Dr. Rodger Dickinson**, DeQueen, Arkansas, was elected a director of the Bank of Horatio at a stockholders' meeting on January 13. Dr. Dickinson is associated with his father, **Dr. R. C. Dickinson** and his brother, **Dr. R. B. Dickinson**, in the Dickinson Hospital and Clinic at DeQueen.

**Dr. Kenneth A. Siler**, Eye, ear, nose and throat specialist, has announced the opening of an office in Harrison. Dr. Siler formerly practiced in Rogers, Arkansas.

A Brinkley doctor, **Dr. Ed McKnight**, has again been appointed to the State Board of Health by the governor for a four-year term. This will make a total of 33 years that Dr. McKnight has served on the State Board.

**Dr. Joseph D. Calhoun** of Little Rock recently attended a meeting of the American College of Radiology, at which time he was awarded a Fellowship. Dr. Calhoun was also recently elected to membership in the American Roentgen Ray Society.

**Dr. George Burton** of El Dorado was recently selected Councilor to the Radiological Society of North America, replacing **Dr. Edwin F. Gray** of Little Rock, who has served in that capacity for the last five years. Another Arkansas physician, **Dr. Loren O. Bohnen** of Hot Springs has been elected to membership in the Society.

The new Ouachita Clinic, on Jefferson Drive in Camden, has recently been completed and occupied by **Dr. L. E. Drewrey** and **Dr. Jim Guthrie**. In addition to the offices, the new building contains a pharmacy.

**Dr. Howard Barnhard** of the University of Arkansas Medical Center in Little Rock was recently elected to membership in the American Roentgen Ray Society.

At Springdale **Dr. Ed Wheat** has been named winner of the Jaycee distinguished award. Active in civic work in the city, he is president of the Springdale Flying Club, and a director in the Little League program.

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## *Proceedings of Societies*

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Members of the Craighead-Poinsett Medical Society, at their regular dinner meeting at Jonesboro January 7, adopted a resolution asking that an end be put to reckless driving and speeding by ambulance drivers. Program for the meeting was a discussion of legal aspects of the practice of medicine presented by two local attorneys.

The Lee County Medical Society met Thursday, January 11, at the Lee Memorial Hospital in Marianna. Drs. E. G. Kelly and C. W. Cheney of Memphis discussed "Medical and Surgical Treatment of Peptic Ulcer of the Stomach and Duodenum".

Dr. Charles W. Kelley was elected president of the Columbia County Medical Association at its January meeting at Martel's Lakeside Lodge in Magnolia. Other officers chosen were Dr. John Ed Alexander, vice-president, and Dr. Charles L. Weber, secretary-treasurer.

The Nevada County Medical Society met in Prescott January 13. Election of officers was held, with Dr. O. G. Hirst being elected president, Dr. Glenn Hairston, vice-president and Dr. C. A. Hesterly, secretary-treasurer. Special tribute was paid to Dr. B. H. Poole of Bodcaw, who at the close of 1958 completed 50 years as a practicing physician.

At a joint meeting of the Monroe County Medical Society and the staff of Mercy Hospital, Brinkley, Dr. J. P. Williams was named president of the Society and Chief of Staff at Mercy Hospital, Dr. E. D. McKnight was elected vice president of the Society and vice-chief of staff, and Dr. N. C. David was elected secretary and treasurer of both the staff and the Medical Society.

The Fifth Councilor District Medical Society met January 21 at El Dorado and elected its officers for the year. Elected were Dr. J. B. Jameson, Jr., of Camden, president, Dr. Albert Clowney, El Dorado,



## FEATURES

vice president, and Dr. John L. Ruff of Magnolia, secretary-treasurer.

Speakers for the evening were Dr. J. D. Ibarra, who spoke on oral diabetic treatment, and Dr. Raleigh White, who spoke on surgery of peptic ulcer. Both speakers are associated with the Scott-White Clinic in Temple, Texas.

On December 16, 1958 the Ashley County Medical Society met in the Staff Room of the Crossett Health Center. The following officers were elected for 1959: Dr. E. C. Gresham, president, Dr. R. L. Salb, vice-president, and Dr. L. E. Edwards, secretary-treasurer. Dr. W. R. Cothorn was elected delegate to the 1959 State Medical Convention, with Dr. W. A. Regnier as alternate.

Dr. E. A. McCracken of Stuttgart was named president of the Arkansas County Medical Society for 1959 at its January meeting in DeWitt. Dr. Fred B. Stone was elected vice president, and Dr. C. W. Rasco, Jr., secretary-treasurer, Dr. T. S. Van Duyn, delegate, and Dr. R. H. Whitehead, Sr., alternate.

Three new members were elected to the Society, Dr. George Pollack, of Gillett, Dr. Jim Maggie and Dr. Jack Pritchard, of Stuttgart.

At a meeting of the Chicot County Medical Association Feb. 2, Dr. Major Smith, Dermott, was elected president, and Dr. Lee Parker, Jr., Dermott, was elected secretary. Dr. Smith was also elected delegate to represent Chicot County at the Arkansas Medical Convention to be held in April. Dr. B. Z. Binns, Eudora, was elected alternate delegate.

Ten doctors of Chicot County were present at the meeting which was held at 7:30 p.m. in the Lakeside summer cabin of Dr. Burge, Lake Village.

The Ouachita County Medical Society met in dinner session at the Camden Hotel in Camden Tuesday, February 3, 1959.

Speakers were Dr. James Doherty of Little Rock, who spoke on "The Role of Lipids in Atherosclerosis", and Dr. Mas

Hara of Little Rock, whose subject was "Present Status of Open Heart Surgery".

The Hospital and Health-Insurance-Physician (HIP) Committee met in Little Rock January 18, 1959.

The approval and beginning use of a standard insurance claim blank for all insurance companies was again discussed and the Health Insurance Council forms were again approved and recommended to the State Insurance Commissioner for his enforcement of their use.

The practice of allowing an insurance company to come into a hospital and audit hospital records was discussed. In principal it was thought that this practice is not an unreasonable demand by insurance companies, and should be allowed with certain reservations.

The adoption of a standard claimant's form was discussed, and the insurance industry was charged with the responsibility of bringing in a standard claimant's form for committee approval.

A luncheon meeting, including a workshop, of the House of Delegates of the Arkansas State Medical Assistants Society was held at the Lafayette Hotel in Little Rock on January 11. Speaker for the meeting was Mr. John Belford of Little Rock, Public Relations Counselor. Plans are being made to hold the Society's Annual Convention in Camden on May 16 and 17, 1959.

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## CONTRIBUTORS

Contributors to the American Medical Education Foundation from Arkansas during January 1959:

Lindsey F. Billingsley, Little Rock	\$10.00
Ralph Joseph, Walnut Ridge	25.00
	<hr/>
	\$35.00

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## ANNOUNCEMENT

### Election of AMA Trustee

Our own Dr. Bob Robins will again run for election as a Trustee of the American Medical Association. A small fund is being raised to defray the cost of a breakfast in his behalf at the next meeting of the AMA. Everyone should be interested in this cause. Contributions may be sent to Dr. Perry Dalton, Camden, Arkansas.

## Woman's Auxiliary

The annual Hospital Benefit Fashion Show-Tea was held on February 7 at the Hotel Pines in Pine Bluff by the Woman's Auxiliary of the Jefferson County Medical Society. Mrs. C. L. Hutchison served as general chairman of the fashion show, with Mrs. Walker Wilkins, Jr., as co-chairman. Mrs. S. C. Monroe was in charge of the tea table.

Mrs. John Cole was hostess to the regular monthly luncheon meeting of the Auxiliary to the Hot Spring County Medical Society, which met January 13. Officers elected for the new year were: Mrs. C. F. Peters, president; Mrs. Jennings Douglass, vice president and social chairman; Mrs. W. F. Barrier, secretary-treasurer; and Mrs. Russell Cobb, reporter.

The Woman's Auxiliary to the Pulaski County Medical Society held a luncheon meeting February 18 in the Dr. Charles Minor Taylor Memorial. Mrs. Kack Kennedy, National Chairman of Community Service of the Woman's Auxiliary to the American Medical Association, moderated a panel discussion. Hostesses for the event included Mrs. Henry D. Johnson, chairman; Mrs. J. O. Porter, Mrs. Walter Selakovich, Mrs. Kay Kreth and Mrs. T. D. Honeycutt.

## Book Reviews

**GYNECOLOGICAL AND OBSTETRIC PATHOLOGY.** Fourth Edition. Emil Novak, M. D. and Edmund R. Novak, M. D. W. B. Saunders Company, Philadelphia, London. Pages: 250. January 2, 1958. \$14.00.

This excellent book on the pathology of the female reproductive system is highly recommended as a standard reference work for anyone doing any gynecology or obstetrics, either medical or surgical. It is very well organized and very well written. The illustrations are excellent. One of the interesting portions of the book is the chapter on gynecologic and obstetric exfoliative cytopathology. Again there are excellent illustrations of the different types of exfoliated cells; the monthly cycle is well illustrated as are non-malignant and malignant cells. An effort has been made to correlate the morology with endocrinology although this phase is not stressed. This book is highly recommended.

**WATER AND ELECTROLYTE METABOLISM IN RELATION TO AGE AND SEX:** Editors for CIBA Foundation G. E. W. Wolstenholme, O.B.E., M.A., M.B., B. Ch.E.; and Cecilia M. O'Connor, B.Sc.; Illustrated; Pp. 327, 1958. \$8.50; Little Brown and Company, Boston, Mass.

This is Volume 4 of CIBA Foundation's Colloquia on aging and constitutes a summary of related subjects at a meeting held under the auspices of the foundation only last year in London.

The various chapters and subjects concern themselves with the control of fluid, from genetic and electrolytic metabolism of body fluids to the ability to maintain a normal cellular nutritional state at all ages.

An excellent chapter on water and electrolyte metabolism in congestive heart failure is given.

The volume consists chiefly of reports of basic research and therefore constitutes a handbook for the bio-chemist and a reference work for those seeking further information of the mechanism of control of body electrolytes and fluids.

**DIFFICULT DIAGNOSIS.** H. J. Roberts. W. B. Saunders Company. Philadelphia-London. Pp. 913. 1958.

It is fortunate that the spectrum of medical textbooks is indeed large. It is rather difficult to know where to fit certain books. There are a group of standard textbooks covering specific types of disease and there are a group of specialty books amplifying material in certain areas. This text falls into the specialty group and is probably of most value to the physician in internal medicine. One might think of it as not supplying new material but simply recodifying old material under a different schema. Whether such a text as this represents something of value to the internist is questionable. The book is generally divided into two parts. The first consisting of related diseases and the second part concerns diagnostic procedures. This book is well written and has a moderate number of good illustrations. However, its scope of usefulness is so limited that it is not recommended except as a reference book for those in internal medicine.

### Answer—What Is Your Diagnosis?\*

**ANATOMY AND DIAGNOSIS:** Leg Tumor; Age, 28; Race, C; Sex, F.

**CLINICAL DATA:** Tumor of left leg. History: At age of 12 she fell on her left leg and since that time she has noticed a large mass on lateral aspect of leg. Mass completely asymptomatic until she became pregnant.

**LAB DATA:** Hgb. 9.1 grams per cent.  
**SURGERY:** Tumor removed.

**PATHOLOGY:** Tumor mass diagnosed as osteogenic sarcoma, juxtacortical type.

**X-RAY FEATURES:** Osteogenic sarcoma (juxtacortical osteogenic sarcoma).

\*University of Arkansas Medical Center Department of Radiology.



# TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

## AN EVALUATION OF TUBERCULOSIS CASE FINDINGS BY TUBERCULIN TESTING AND SOME OBSERVATIONS OF HISTOPLASMIN SENSITIVITY AMONG YOUNG SCHOOL CHILDREN

By LAWRENCE E. WOOD, MICHAEL L. FURCOLOW, and MYRON J. WILLIS,  
American Review of Tuberculosis and  
Pulmonary Diseases, November, 1958.

Yearly tuberculin and histoplasmin skin tests of young children over a ten-year period show that the prevalence of tuberculin sensitivity remained constant. The examination of contacts of tuberculin reactors continue to be a good case-finding method.

Yearly tuberculin and histoplasmin skin tests among children of the kindergarten and first grades of the public schools in Kansas City, Missouri, have been performed for the past ten years. The present study was directed primarily toward tuberculosis, but since histoplasmosis often presents a problem of differential diagnosis in this area, simultaneous histoplasmin and tuberculin tests were applied.

The purpose of this report is to summarize the results of the ten-year study with particular reference to the annual prevalence rates for tuberculin and histoplasmin sensitivity, conversion rates for these antigens, and to the yield of tuberculosis among the tuberculin reactors as well as among their household and non-household contacts. The results show the correlation of the size of the tuberculin reaction with the yield of tuberculosis. Estimates of the cost of finding tuberculosis by this method are presented.

## TUBERCULIN SENSITIVITY UNCHANGED

The results of these studies substantiate those previously reported on the prevalence of tuberculin and histoplasmin sensitivity among kindergarten and first-grade children in the public schools of Kansas City, Missouri.

The prevalence of tuberculin reactors among 35,995 kindergarten children was observed in the ten years between 1947-

1957, and a comparison of the prevalence rates for white and Negro children was made. Although there is some variation from year to year, the over-all tuberculin sensitivity rate among Negroes is almost twice that of whites (2.6 per cent versus 1.5 per cent). In contrast, the histoplasmin rates for the entire group are higher for white children than for Negroes (10.4 per cent versus 8.7 per cent).

The tuberculin sensitivity rates were remarkably consistent from year to year and showed no tendency to decline over the entire ten-year period of observation.

During the first few years of this study the histoplasmin prevalence rates among white children were higher than among Negroes, but during the last years were approximately the same. The annual histoplasmin conversion rates, however, were consistently higher among the Negro children.

The section of the city having the highest tuberculin sensitivity rate also had the highest mortality rate, and the section having the lowest sensitivity rate also had the lowest mortality rate.

Among 29,202 white kindergarten children who were classified as nonreactors to tuberculin, there were 500 who showed some induration and erythema at the site of injection but less than the acceptable standard for a positive reaction. There were also 352 children whose test produced only erythema. Among the white children whose reaction was considered positive (induration 5 mm. or more) the measurement of the erythema averaged 8 mm. more than that of the induration.

Recently there has been renewed interest in the tuberculin test as a method of tuberculosis case finding. This interest has been stimulated largely by three factors. First, mass roentgenographic surveys become less efficient and more expensive as the tuberculosis case rate diminishes. Furthermore, participation of the eligible age groups is often disappointing. Second, the efficiency of the tuberculin test as a case-finding procedure increases as the general prevalence of tuberculin sensitivity decreases. Recently a third factor of minimizing the exposure to ionizing radiation has been introduced. This study included roentgenograms only of tuberculin reactors

and their close contacts and thus represents a fairly high degree of selective roentgenographic exposure.

The youngest of school children were selected for this study because, if tuberculous infection had occurred, it would be relatively recent and their contacts would be limited and easier to follow. The yield of new tuberculosis cases among the children was low, as would be expected, but among the adults there were a surprising number of previously unknown cases of tuberculosis, the average being about twelve times that obtained by mass roentgenographic survey. A high percentage of active tuberculosis was found among the previously known cases. Most of these persons had received some form of treatment. Information indicates that the disease was considered inactive in many of these cases and that further follow-up examination had been discontinued either by the patient, his family physician, or the clinic physician. The importance of continued close observation of all known tuberculosis patients is particularly urgent in view of the fact that an accelerated hospital treatment program has been accepted in many communities.

This survey revealed another fact of considerable public health interest. In this community the percentage of children infected with tubercle bacilli at the time of entrance in school is the same now as it was ten years ago. Furthermore, the percentage of children who became infected during their first year in school was relatively high and showed no tendency to decline over the period of seven years' observation.

These relatively constant annual tuberculin prevalence and conversion rates should represent a reasonably accurate index of tuberculosis control within the city. There appears to be no ready explanation of the failure of these rates to fall when the death rate for Kansas City has fallen from 31.1 to 11.7 during the ten years of the survey. Reliable morbidity rates are not available.

#### SUMMARY

Some of the most important facts derived from this study are:

1. Tuberculin prevalence rates among children in the kindergarten show no tendency to fall over the ten years of observation either in whites or Negroes.
2. The conversion rates to tuberculin observed in children who were nonreactors in kindergarten do not show a tendency to fall during the seven years' observation.
3. Uses of the tuberculin test for obtaining index children whose contacts form a special risk group for extensive follow-up study not only gives a better yield of tuberculosis cases than mass roentgenography, but at the same time decreases the total exposure of a population to ionizing radiation.
4. The yield of active tuberculosis cases found by follow-up study of contacts of children who are converters was not greater than that found by follow-up study of children who were tuberculin reactors on the first test in kindergarten or first grade.
5. The cost of finding a case of tuberculosis by the methods of this study is about the same for the mass roentgenographic method.



# The JOURNAL

## OF THE ARKANSAS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF THE COUNCIL

Volume 55

MAY, 1959

Number 12

### The Milk Alkali Syndrome - A Case Report\*\*

MALCOLM W. DAVIS, M.D.\*

The syndrome of hypercalcemia, alkalosis, azotemia, renal insufficiency and calcinosis developing in patients taking milk and absorbable alkali in treatment of peptic ulcer was first reported by Burnett and co-workers in 1949.<sup>1</sup> The author concluded that "The abnormalities observed in the calcium and phosphorus metabolism were the result of the following sequence of events: (1) excessive intakes of milk (a foodstuff high in calcium and phosphorus) and alkali; (2) kidney damage; (3) tendency to super-saturation in respect to calcium phosphate; (4) calcinosis. The improvement resulting from a low intake strongly supports this sequence."

Numerous case reports subsequently have confirmed the occasional development of the syndrome under similar circumstances.<sup>2,3,4</sup> In February, 1958, Wenger, Kirsner, and Palmer, after reviewing 3,300 patients at the University of Chicago disclosed 35 cases with unequivocal evidence of the syndrome. (5) The distribution of the cases is of interest; whereas one to three instances were observed each year between 1947 and 1953, there were eight patients with the syndrome in 1954, nine during 1955, and eight in 1956. They felt the changing incidence could not be due to a significant modification of the treatment of peptic ulcer, though antacids containing alumi-

num hydroxide and magnesium trisilicate have been utilized more often in the past three years than formerly. In the absence of a more satisfactory explanation, the increase incidence may be related to more frequent electrolyte study. Whereas nausea in the past may have been attributed to excessive intake of milk and cream, in recent years nausea has constituted an almost immediate indication for electrolyte study.

This case was chosen of special interest for two reasons: (1) because of the severity of the central nervous system symptoms, and (2) the recurrence of the almost identical clinical picture and recovery.

#### CASE REPORT:

A 47-year-old white male was admitted to the Fort Roots Veterans Administration Hospital in a semi-stuporous state on November 23, 1956. A friend who accompanied him gave information he had had several convulsions, the first on November 5, 1956, and three on November 19, 1956, after which he had "passed out" and had since been irrational. Family doctor had started treatment with dilantin and phenobarbital and referred him to the hospital with a diagnosis of possible brain tumor. Additional information was obtained later, but was limited since the patient had been living alone. He had been discharged from military service in 1942 with a peptic ulcer. Alcoholism had long been a problem, the patient drinking sporadically almost every week, and then taking baking soda in large amounts, as much as a box a day. In the past month he used as much as 3-4 quarts of milk a

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\*\*Presented at the Regional Meeting, Arkansas-Oklahoma Region, American College of Physicians, Hot Springs, Arkansas.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

day, but had deteriorated physically, been eating very little and had vomited several times in the week before admission.

On physical examination, the patient was a thin middle aged white male who was semi-stuporous, but could be easily aroused. He was confused and irrational, talking incoherently and frequently hic-coughing. Pupils were normal and reacted to light. Funduscopy was difficult because of wandering movement of the eyes, but discs appeared normal, with no hemorrhages or exudates. Blood pressure was 140/70. The abdomen was somewhat distended and tympanitic, with apparent tenderness in the epigastrium. Fecal material in the rectum was brown, positive for blood with hematest, but hemorrhoids were present.

Representative laboratory findings are tabulated in Table I.

X-ray studies which included skull films, and skeletal survey showed no areas of metastatic calcification. Intravenous pyelogram on January 24, 1957 showed delayed excretory function, but no renal calculi. Upper G.I. series December 12 demonstrated a definite ulcer crater in a markedly deformed duodenal bulb. Emptying was complete in five hours. An ulcer crater could not be seen on January 16, and again on March 16, but the deformity and scarring was again described. Special examinations of the corneas with slit lamp was negative for any visible deposits.

He was treated with intravenous infusions of saline, and when able to take oral food and medication, a low calcium diet, anticholinergic drugs (Pathilon®) and antacids (Gelusil®). There was steady improvement, more rapid clinically than in laboratory values. Surgical treatment was considered, but rejected by the patient, and he was discharged April 12.

He was readmitted to the hospital December 1, 1957 after again having several convulsions in the preceding twenty-four hours, and again no admission history could be obtained from the patient and very little from the son who accompanied him. Apparently he had done well for a time, then reverted to his previous alcoholism, neglecting his diet, and had

been vomiting in the preceding two weeks. Nothing was known about his medication, his soda or milk intake. He had a grand mal convulsion while being put to bed on admission.

On physical examination he was found to be a thin, pale, restless and semi-stuporous white male, who was extremely dehydrated. Pulse was 96 and blood pressure 110/80. All mucous membranes were very pale, tongue was dry, the lips dry and fissured. Heart and lungs were not remarkable, the abdomen soft and flat. Bleeding external hemorrhoids were present. Deep tendon reflexes were slightly hyperactive, and no pathological reflexes were elicited.

He required restraints in bed, and received sodium liminal intramuscularly at intervals for the first several days for his restlessness and as an anticonvulsant. Dehydration was corrected with intravenous infusions, and oral fruit juices when he became able to take them.

The laboratory findings are tabulated in Table II.

G. I. series done December 5 showed a marked dilatation of the stomach with multiple food particles, and marked six-hour retention. He then received continuous gastric suction for five days, then trial of liquid diet. Nightly gastric aspirations obtained 300-800 cc. indicating continued obstruction. When electrolyte values were reasonably well corrected he was transferred to the Surgical Service where a subtotal gastric resection was carried out on December 30, 1957. At operation almost complete obstruction was found in the first part of the duodenum, with a large ulcer crater 1.5 x 2 cm. in diameter, which had eroded into the head of the pancreas near the region of the bile duct, with a mass of fibrous adhesions involving the under surface of the liver and the gallbladder. Postoperative course was satisfactory, and he was discharged January 22, 1958. At time of discharge, the BUN was still elevated at 45 mg. per cent.

In summary, a case is presented of profound electrolyte disturbance, characterized by severe azotemia, renal impairment, which was only partially reversible,



Table I — LABORATORY DATA

DATE	BUN Mg%	CO <sub>2</sub> mEq/L	Ca Mg%	P Mg%	Na mEq/L	Cl mEq/L	K mEq/L	Hb	MISC.
11-24	189							14	Urine—RBC's 1+ Protein
11-26		35	8.9	9.9	127	65	4	12.4	Sulkowitch—Negative
11-27	150	36	8.5		128	76	4		
11-28	124	30			128	80	4.2	10.7	
11-29	120	27		4.4	137	94	4.1		Alk. Phos. 4.7 B. U.
11-30	96	25		3.8	139	100	3.8	10	
12-3	56	25	10.1	3.8	140	101	4.3	11.4	Urine normal Alk. Phos. 4-3 B. U.
12-12	35	23	10.8	4.4	138	100	4.6	10	P.S.P.—12%
12-26	37		9.6	4.5					Urea clearance 1st Hr.—25.8% 2nd Hr.—25.4%
2-26	25		9.0	3.8	137	95	4.8	10.9	
4-5	17							11.9	P.S.P.—29.5%

Table II — LABORATORY DATA

DATE	BUN Mg%	CO <sub>2</sub> mEq/L	Ca Mg%	P Mg%	Na mEq/L	Cl mEq/L	K mEq/L	Hb	MISC.
12-2	80	44	9.4	10.0	148	71	3	12.9	Urine-RBC's pH-7.5 Trace protein
12-3	105	40			141	80	3.5	8.5	
12-4		38			138	82	3.6	8.6	
12-5		35			137	88	4.8	9.5	Gastric suction Urine normal-pH-7.5
12-7	115	34			137	84	4.6		
12-8	124	39			144	88	4.0	10.7	
12-9	82	37	9.4	7.3	145	93	4.2	9.8	Suction stopped
12-10	68	40			150	94	3.9	11.0	
12-11	76	37			145	90	4.3	9.5	
12-13	62	34			138	91	5		
12-17	39	34	9.5	3.0	139	95	4.7		Trans. to Surg.

alkalosis, reversal of the normal calcium phosphorus ratio, no increase in the urinary calcium excretion, and improvement with low calcium and milk intake. Though this patient does not demonstrate the hypercalcemia and metastatic calcifications of previous reports, the pronounced disturbance in the calcium phosphorus ratio, with an alkalosis in the face of uremia, is in keeping with the basic physiochemical changes typical of the milk alkali syndrome.

Pre-existing renal disease could not be confirmed by history, but this report again emphasizes the role of the kidneys in the development of the syndrome. Most

case reports emphasize the reversibility of the renal impairment. In this patient, it is noteworthy that though the azotemia became corrected during the first admission, other renal studies showed residual renal impairment. On the second admission, the azotemia was never fully correctible.

#### CONCLUSIONS

The milk alkali syndrome is a potentially serious complication of the treatment of peptic ulcer. Early recognition of the syndrome should lead to prompt correction of the electrolyte imbalance and perhaps prevent more serious renal changes. This report emphasizes the central ner-

vous symptomatology which may dominate the clinical picture.

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## Differential Diagnosis of Poliomyelitis\*\*

FRED M. TAYLOR, M.D.\*

Widespread use of poliomyelitis vaccine clearly accounts for the steady reduction in incidence of paralytic poliomyelitis in recent years. In order for this incidence of paralytic poliomyelitis to continue to be extremely low (and possibly eliminated entirely), reliable sources (1, 2) reiterate with conviction that all potentially susceptible persons in the United States must be properly immunized. Public health reports indicate that approximately one-fourth of the incidence of paralytic poliomyelitis occurs in persons in the age group between 30 and 50 years of age. Since most persons in this age group have not been vaccinated, poliomyelitis may continue, therefore, to be a source of major disability and concern for many human subjects.

The purpose of this paper is to highlight clinical conditions which often are confused with poliomyelitis (nonparalytic and paralytic) and to emphasize several clinical features which aid in its differential diagnosis.

A number of summer epidemic illnesses are characterized by manifestations which suggest to the physician, and even more often to the layman, possible signs of early poliomyelitis. Some of these clinical manifestations are well-known symptoms — pain and weakness of muscle

groups, or pain and tightness of neck muscles; and it is not surprising that some confusion frequently exists in the diagnosis of this paralytic disease.

It is well established that meningismus and a number of nonspecific symptoms (fever, headache, vomiting, anorexia) also are typical symptoms of many disorders, especially acute infectious diseases of the respiratory system and alimentary tract. These are commonly occurring illnesses, most often benign and self-limited, and their clinical resemblance to poliomyelitis is usually a superficial one. In other instances the clinical manifestations simulate poliomyelitis so closely that even the physician may have substantial difficulty in arriving at an exact diagnosis.

#### ENTEROVIRUSES WHICH SIMULATE POLIOMYELITIS

In recent years it has become increasingly apparent, for example, that many acute infections of the nervous system which heretofore were clinically diagnosed as nonparalytic poliomyelitis (perhaps even paralytic poliomyelitis) are associated etiologically not only with strains of poliomyelitis virus, but also with different strains of the Coxsackie and ECHO groups of viruses. (2, 3)

Many epidemics of clinical syndromes of so-called nonparalytic 'polio', 'aseptic meningitis', virus meningitis, and viral meningoencephalitis are due to strains of the Coxsackie group and of the ECHO

\*From the Junior League Diagnostic Clinic, The Texas Children's Hospital and the Department of Pediatrics, Baylor University College of Medicine, Texas Medical Center, Houston, Texas.

\*\*Presented at the Pediatric Symposium, annual session of the Arkansas Medical Society, Hot Springs, Ark., May, 1958.



group of viruses (2, 3). In addition, increasing evidence suggests that certain strains of both the Coxsackie (2, 3, 4) and the ECHO virus group (2, 3) may be responsible for causing a type of paralytic disease which is clinically not unlike that produced by the poliomyelitis virus. This may serve to explain in some instances the occurrence of 'paralytic poliomyelitis' in persons who had been properly immunized.

Since all three viral groups (poliomyelitis virus, Coxsackie virus and ECHO virus) are readily isolated from the human alimentary tract and are fundamentally similar in other respects (producing a syndrome of aseptic meningitis, tendency to seasonal occurrence, etc.) the proposal (5) has recently been made to place all three groups of viruses into a single family of "enteroviruses".

Clinical features of epidemics of ECHO virus infection consist of fever, nausea and vomiting, frontal headache and photophobia, stiff neck, muscle pain and transient muscle weakness. In most instances there is no appreciable stiffness of spine and hamstring musculature, which is in contrast to the stiffness and pain usually conspicuously present in poliomyelitis. Another finding of clinical interest is a macular 'rubelliform' skin exanthem which appears in about one-fourth of the patients.

Examination of the spinal fluid in ECHO virus infection usually shows changes in the cell count and protein similar to those occurring in poliomyelitis. The level of protein may even be normal. In some instances of ECHO virus meningitis, however, the spinal fluid shows a pronounced elevation in the number (often 1000-2000 WBC's per cu. mm.) of neutrophils. Since this degree of neutrophilic leukocytosis is higher than that ordinarily seen in most viral infections of the nervous system, the possibility of early bacterial meningitis must be strongly considered. In ECHO virus infections the level of the spinal fluid sugar is normal and the bacteriologic studies are negative.

#### OTHER ILLNESSES SIMULATING POLIOMYELITIS

Experience by our professional staff (6) in a special center for persons with severe poliomyelitis, indicates that at least fifteen per cent of patients referred with a diagnosis of poliomyelitis have some type of illness other than poliomyelitis. Over a four year period, for example, 151 patients out of a total of 1000, or 15 per cent, were found to have a nonpoliomyelitis disease. These patients, who were erroneously diagnosed as having poliomyelitis, were shown to have a wide variety of illnesses.

Conditions capable of producing symptoms most often confused with poliomyelitis were acute encephalitides, purulent bacterial meningitis, infectious neuritis (Guillain-Barré syndrome), postinfectious effects of varying communicable diseases (such as mumps and varicella), etc.

The following clinical summaries concern several patients whose illnesses were confused in some way with poliomyelitis. This emphasizes the fact that many difficulties of diagnosis are often resolved by simply carrying out a thorough history, a proper physical examination, and an adequate laboratory study.

#### CASE SUMMARY REPORTS

**CASE 1.** A 2 year old girl developed stiffness of the neck, fever and anorexia. Two days later exudate was noted on the tonsils and there was tender enlargement of cervical lymph nodes. Spleen and liver were moderately enlarged. Tendon reflexes were normal. Examination of spinal fluid was normal. White blood cell count was 32,900 per cu. mm. with pronounced lymphocytosis. So-called 'atypical lymphocytes' were noted. Heterophile antibody titer was positive (1:896).

*Diagnosis: Infectious mononucleosis.*

Involvement of lymph glands in the retropharyngeal and cervical areas by inflammation and enlargement for various reasons may account for the development of meningismus. A type of involvement of the nervous system in association with infectious mononucleosis may be capable of causing the clinical manifestations of

"aseptic meningitis", together with an increase in the spinal fluid of lymphocytes and of the level of protein. On occasion infectious mononucleosis also may be associated with the 'Guillain-Barré syndrome' (symmetrically ascending motor paralysis with conspicuously high levels of protein and a normal number of cells in the spinal fluid).

CASE 2. A 10 year old boy was hospitalized because of stiffness of neck and back and semi-stupor. Two days before he developed headache, fever and ataxia. Examination of spinal fluid showed 65 WBC's per cu. mm. (50 per cent neutrophils); protein was 65 mg. per 100 cc. A typical varicelliform exanthem appeared two days later.

*Diagnosis: Varicella meningoencephalitis.*

Most of the communicable diseases (rubeola, rubella, mumps, diphtheria, etc.) may be preceded or accompanied by involvement of the nervous system. Severity of clinical manifestations varies widely, ranging from mild symptoms of noticeable irritability to more advanced stages characterized by 'aseptic meningitis', meningoencephalitis, cranial nerve paralysis, and myelitis. Similar complications may develop after smallpox vaccination and prophylactic rabies inoculations.

Presence of acute purulent bacterial meningitis can usually be eliminated by proper examination of the spinal fluid. Bacterial meningitis requires accurate diagnosis and energetic treatment. Spinal fluid shows typical changes: striking neutrophilic pleocytosis, appreciably reduced level of glucose, and substantial elevation of the level of protein. In addition, properly stained films and cultures of spinal fluid before antibiotic therapy is commenced enhance the opportunity to identify the etiologic organism.

In nonbacterial meningoencephalitis and viral meningitis, on the other hand, spinal fluid changes consist of modest and moderate increases in lymphocytes, normal levels of glucose, and a mild to moderate increase in level of protein. Partially treated bacterial meningitis (with

antibiotic and chemotherapeutic agents) is frequently a source of major diagnostic difficulty, especially when the level of spinal fluid glucose is near normal and cells in the spinal fluid consist principally of lymphocytes.

CASE 3. A 9 month old male twin developed increasing irritability and inability to move normally the lower limbs. Tendon reflexes were normal. Hemoglobin was 8.5 Gm. per 100 cc. Red blood cell count was 2.8 million per cu. mm. Serological test for syphilis was negative. Examination of spinal fluid was normal.

*Diagnosis: Scurvy.*

This patient also demonstrated exquisite tenderness of the limbs, palpable swelling over the tibias, hemorrhages at the base of central incisor teeth, prominent costochondral 'beading', and typical roentgenographic skeletal changes of scurvy, together with a history of inadequate vitamin C in the diet for six months. Several days later his twin sibling (who also had scurvy) was sent to the hospital with a diagnosis of paralytic 'polio' because of a similar history.

Unfortunately scurvy is still one of the reasons for 'pseudoparalysis' in infants. Not uncommonly the diagnosis of paralytic poliomyelitis is mistakenly made when the physical examination is incomplete and knowledge of details of the patient's illness and preceding history is clearly inadequate.

Many examples of so-called "infantile paralysis" are not due to infection with one of the many strains of poliomyelitis virus. Indeed, a remarkable number of instances are due to varied types of local changes occurring either in the neurogenic or musculoskeletal system. As a simple example, involvement of musculoskeletal areas by a variety of causes which produce pain — 'sprains', myositis, fracture, arthritis, acute osteomyelitis, syphilis osteochondritis, abscess of the hip, etc. — often accounts for sufficient local disability to cause 'pseudoparalysis' of the involved area.

CASE 4. A 2 year old boy was hospitalized because of headache and fever for two days. Vomiting and ab-



dominal pain had occurred intermittently for one month, accompanied by loss of weight. One year before this, a sibling had died of poliomyelitis.

Patient was extremely lethargic. There was moderate stiffness of the neck and diminished deep tendon reflexes. Babinski reflexes were positive. Examination of the 'eye-grounds' was normal. Examination of spinal fluid showed 129 WBC's per cu. mm. (97 per cent lymphocytes). Protein was 30 mg. per 100 cc.; glucose was 68 mg. per 100 cc.; and chlorides were 740 mg. per 100 cc.

Irregular breathing and cyanosis and inability to swallow developed, death occurring seven hours after admission to the hospital. X-ray examination of the patient's skull before death showed separation of cranial sutures.

*Diagnosis: Medulloblastoma of cerebellum.*

This child's illness was initially thought to be due to acute poliomyelitis, complicated by fulminating bulbar and encephalitic involvement. The history of increasing physical difficulty (vomiting, weight loss, etc.) for one month and the demonstration of separation of cranial sutures (after a 'spinal tap' was carried out) mitigated strongly, however, against the more commonly occurring types of acute infectious diseases of the brain. Autopsy examination confirmed the presence of a malignant tumor of the cerebellum.

The number of extremely diverse conditions which simulate poliomyelitis is exceedingly impressive. Table I lists many of these disorders, especially those which may be characterized by what appears principally to be signs of meningitic, encephalitic and paralytic involvement.

CASE 5.—A 16 year old male was transferred to the Poliomyelitis Respiratory Center in August because of increasing breathing difficulty and occasional vomiting for 10 days. Physical and neurological examination was normal except for frequent "sighing types" of breathing. Examination of spinal fluid was normal.

*Diagnosis: Anxiety state.*

Patient was provided sedation and psychiatric care for extreme 'poliophobia' and pronounced anxiety. Profound anxiousness and fear are often striking in acute poliomyelitis, however, especially when involvement of the central nervous system tends to be severe. The diagnosis of primary behavioral disorders and conversion hysteria may not always be easy. Physical findings (in conversion hysteria) are generally inconsistent, and there may be bizarre sensory disturbances. The patient usually has no abnormal elevation of temperature, and the examination of spinal fluid is normal.

This serves to emphasize again that the clinical diagnosis of poliomyelitis (even paralytic) is frequently a presumptive one. Proper examination of the patient must be carried out, and thorough laboratory studies (whenever practical and realistically indicated) should be performed.

CASE 6. A 13 year old boy developed fever, headache, sore throat and stiff neck. Two weeks before this he had visited a friend who had poliomyelitis one year previously.

He was exceedingly anxious, sitting in a "tripod position". Moderate stiffness of the neck and distention of bladder were present. Absence of tendon reflexes and complete paralysis of lower limbs developed several days later. Examination of spinal fluid showed 3 WBC's per cu. mm. and 430 mg. per 100 cc. of protein. X-ray examination of the spine was normal.

*Diagnosis: Infectious neuronitis (Guillain-Barré syndrome).*

The Guillain-Barré syndrome is capable of causing a significant number of paralytic illnesses which often are labeled with the diagnosis of acute paralytic poliomyelitis. The paralysis of poliomyelitis tends frequently to be patchy in distribution and asymmetrical, whereas the paralysis of the Guillain-Barré syndrome tends to be bilateral and symmetrical. A peripheral type of bilateral 7th cranial nerve paralysis also is frequently noted.

The so-called "tripod position" (often stated to be the typical sitting postural

reaction of early poliomyelitis) is in fact a manifestation of any disorder (trauma of spine, postspinal tap, Pott's disease, tumor of spinal cord, etc.) causing involvement of spine and adjacent tissues with resulting pain.

CASE 7. A 4 year old girl was hospitalized in September because of weakness of legs, diarrhea and irritability for 24 hours. Absence of tendon reflexes of the lower limbs and paralysis of both legs ensued. Muscle spasm and nuchal rigidity were absent. Examination of spinal fluid was normal.

*Diagnosis: Tick paralysis.*

A tick in the patient's scalp was accidentally discovered by a nurse. Typical clinical features of tick paralysis consist of absence of fever and pain, normal spinal fluid examination and recovery from paralysis (usually within 24 to 48 hours) after complete removal of the tick.

SUMMARY

Although the incidence of paralytic poliomyelitis has reduced sharply in recent

years, it may continue to be a disabling illness in susceptible persons.

Summer epidemic illnesses (Coxsackie and ECHO virus infections) and a wide variety of clinical disorders which may simulate poliomyelitis are reviewed.

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TABLE 1—CONDITIONS CONFUSED WITH POLIOMYELITIS

	Infections of CNS	Infections Outside CNS	Miscellaneous
MENINGITIC SIGNS	Coxsackie meningitis	Acute URI	Trauma
	ECHO meningitis	Pneumonia	Poisoning
	Mumps meningitis	Acute gastro-enteritis	Brain tumor
	Bacterial meningitis	Infectious mono-nucleosis	Spinal cord tumor
	Postinfectious 'effects'	Epidural abscess	Arthritis of
	Brain abscess	Tuberculosis of spine	cervical spine
	Tuberculous meningitis	Tetanus	Rheumatic fever
	Leptospirosis		Scurvy
	Mycotic infections		
	Lymphocytic choriomeningitis		
ENCEPHALITIC SIGNS	Acute 'encephalitides'	Septicemia	Trauma
	Bacterial meningitis	Acute gastro-enteritis	Subdural hemorrhage
	Tuberculous meningitis		Subarachnoid hemorrhage
	Postinfectious 'effects'		Brain tumor
	Coxsackie meningo-encephalitis		Poisoning
	ECHO meningo-encephalitis		Cerebral convulsive state
	Mumps meningo-encephalitis		Diabetic coma
	Herpes simplex meningo-encephalitis		Hypoglycemia
	Rabies		Acute degenerative disease
	Brain abscess		
PARALYTIC SIGNS	Acute 'encephalitides'	Guillain-Barre' S.	Trauma
	Postinfectious 'effects'	Infectious mono.	Scurvy
	ECHO meningitis	Osteomyelitis	Spinal cord tumor
	Coxsackie meningitis	Septic arthritis	Postcerebral convulsive state
	Postdiphtheric infection	Tick paralysis	Poisoning
	Rabies		Hysteria
	Syphilis		



# Current Immunization Procedures\*\*

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Although there has been a great amount of new information in the last few years that has changed our present immunization thoughts, many sound practices which are applicable in all fields should be re-emphasized. Two new vaccines have been introduced commercially in the last four to five months. One of these is against a hitherto uncontrolled disease. Changing epidemiological patterns to diseases such as diphtheria and poliomyelitis due to immunization processes have all added to this flux. (1) Our vaccines are of greater purity and potency than ever before.

Our routine immunization procedures in the United States include poliomyelitis, smallpox, diphtheria, tetanus, and pertussis vaccination. In this paper we will discuss immunization problems generally and endeavor to relate recent research to our changing vaccination program. Lastly, we will give a suggested immunization schedule.

## ROUTINE COMBINED IMMUNIZATIONS:

It is recommended that all infants be actively immunized against diphtheria, pertussis, and tetanus with a course of three injections using alum precipitated, aluminum hydroxide adsorbed, or aluminum phosphate precipitated diphtheria and tetanus toxoid containing *Hemophilus pertussis* vaccine beginning at one to two months of age. The combined vaccines give a much better immunity to all three diseases than do each singly. (2) There are distinct advantages in using the combined vaccine at an early age in that fewer injections are required, it is convenient, the child has no memory of the shots, and an immunity to all three diseases can be achieved at an earlier age than with single antigens. This early immunity is especially important for pertussis because fifty per cent to seventy per cent of the deaths from pertussis occur in the first year of life. There is no increase in the number or severity of reaction to the multiple antigens as compared to single anti-

gens. (3) Sako showed that an infant could produce antibodies that would be protective against pertussis as early as one to two months of age. (6) Osborn and others have shown that a two week old infant with passively transferred diphtheria-tetanus antibodies present in its serum gave a satisfactory antibody response to a single injection of a potent diphtheria and tetanus toxoid. (7)

The advantages of the use of adjuvants such as alum, aluminum hydroxide, and aluminum phosphate over fluid or saline antigens are as follows: (a) more prolonged antitoxic immunity; (b) greater effectiveness as immunizers against pertussis in early infancy; (c) less likelihood of producing systemic reactions because of lower protein content and slower absorption. The disadvantages are: (a) a greater delay between injection and immunological protection; (b) a higher incidence of local reaction, such as sterile abscesses. (4) Adjuvants increase the antibody producing ability of antigens. Alum precipitated diphtheria toxoid is one hundred fold more effective than fluid diphtheria toxoid in stimulating the production of antibodies. In experimental animals aluminum phosphate adsorbed diphtheria toxoid gave five to six times more antitoxin than the same amount of alum precipitated toxoid. (1) Sauer and associates found fewer and milder reactions to aluminum phosphate adsorbed DPT than to alum precipitated DPT. (5)

In any community, the number of well baby visits diminishes after the first few months; hence, it is sensible to complete as many of the basic immunizations as soon as possible. All basic immunizations should be completed by the time the child is six months of age.

## SMALLPOX:

Historically this was the first disease for which an immunological agent was perfected and is the only one routinely used containing a living virus. In addition to the standard calf lymph vaccine, the virus now has been cultured in chick embryos and in tissue cultures. This has

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been lyophilized so that it needs no refrigeration as does the liquid antigen which is a definite advantage. (8) This material is being used by the World Health Organization in E. Pakistan to control their present epidemic.

**Procedure:** The multiple pressure method using calf lymph vaccine is routinely used. The author uses the skin just posterior to the insertion of the deltoid because it is less conspicuous and perhaps better protected from trauma and scratching. The skin is prepared with soap and water followed by an acetone swab. Alcohol is not used. (4)

Generally, a vaccination, to be successful, should show a primary take or, on revaccination, an accelerated reaction. The interpretation of an immune reaction is controversial. No reaction, except in rare instances, is the result of faulty technique either in virus storage or vaccination. (9)

A smallpox vaccination should be done before the end of the first year of age because complications such as encephalitis are rare in this age group.

Certain precautions should be emphasized. (1) Do not vaccinate a child with eczema or dermatitis. (2) Do not vaccinate anyone with a gamma globulin disorder because of the danger of vaccinia gangrenosa, a progressive local spread of the initial vaccination to produce necrosis, heaped margins, and daughter lesions. A complication about the eyes is vaccinal disciform keratitis which can cause blindness. These serious complications should be treated with antibiotics to prevent secondary bacterial invasion and with hyperimmune vaccinia gamma globulin. (10)

#### DIPHTHERIA :

This is usually given with pertussis and tetanus beginning at one to two months of age. The antigen is the formalin treated soluble exotoxin of *Corynebacterium diphtheriae*. When given properly it will produce an adequate immunity in nearly all people. Top states that it is preferable in children under five to six years to give a booster instead of a Schick test to determine protection six months or more after a primary inoculation. (11)

For a given population to remain free of spread of diphtheria it has been estimated that seventy per cent of the inhabitants must be immune to diphtheria. Since we have instituted extensive diphtheria immunization programs and have not continued to give adults booster shots at periodic intervals, we are gradually producing a susceptible adult population because the older individuals are not coming in contact with diphtheria cases as they did prior to extensive diphtheria vaccination. (12) This paradox has been borne out by the increase of adult mortality to diphtheria in the last decade. (13)

**Procedure:** Under ten years, two or three monthly 0.5 cc. doses of adsorbed toxoid are injected intramuscularly. If cases of diphtheria are present in the area, fluid toxoid can be given every ten days for three injections. Boosters should be adsorbed toxoid.

Over ten years of age a special diphtheria-tetanus toxoid for adult use should be used. This material is designed to prevent the severe local and generalized reactions to diphtheria-tetanus toxoid. The amount of diphtheria antigen in the toxoid has been decreased considerably from that used in children. Booster diphtheria-tetanus adult type should be given every three years. This material obviates the use of the Moloney test for toxoid sensitivity and the Schick test except under experimental conditions. (14)

#### TETANUS:

This is a distinctly effective immunity once established. During World War II, of 2,500,000 wounded American men, fifteen developed tetanus of which only six had completed their full series of tetanus shots. Adequate recall has occurred ten years or longer after primary immunizations were completed. (15)

**Procedure:** Two intramuscular injections of 0.5 cc. doses of tetanus toxoid are given at one to four months intervals. Booster shots are advised one year after the initial series and every three years thereafter. "Wound booster" consists of 0.5 cc. of fluid or aluminum hydroxide adsorbed tetanus toxoid because of rapid antitoxin response. Antitoxin is given at a different site than the wound booster



if (a) the wound is over forty-eight hours old; (b) in the presence of wounds which may present the possibility of fulminating tetanus infections; (c) on theoretical grounds, at least, in the presence of profound shock. (4, 17)

Active immunization should be given to: (a) all children; (b) all adults, especially those with a strong history of allergy; (c) all people who have received passive immunity with only 1,500 to 3,000 units of tetanus antitoxin. The toxoid may be given at the same time in a different site. One can expect benefits from both materials. If larger doses of antitoxin are used, one must wait four to eight weeks before starting active immunization; (d) all people who have recovered from tetanus. The disease does not confer permanent immunity and these individuals should be given toxoid immunization six to eight weeks later. (15)

#### PERTUSSIS:

This vaccine is a suspension of killed *Hemophilus pertussis* organisms. Because of the variation of antigenicity in the older vaccines, the National Institute of Health has devised a unit of measure called a mouse protection test instead of basing the dose on the number of killed organisms injected. Twelve of these units are necessary to produce immunity. This should eliminate the use of impotent vaccine and also reactions due to overdosage.

Procedure: Three injections of four N.I.H. units each at one month intervals should be given. Usually it is combined with adsorbed diphtheria and tetanus toxoid. If a local epidemic occurs, one can speed up the immunization process by using fluid vaccine 0.5 cc. (four N.I.H. units) for three injections one week apart.

A routine booster should be given one year after primary immunization and every three years thereafter until school age. Fluid vaccine, 0.5 cc., (containing four N.I.H. units) should be used for rapid recall if needed. Reactions to pertussis vaccine are more common in young children than following diphtheria and tetanus toxoid. Usually these are not serious. About one-third of the children develop febrile reactions within thirty-six hours. Antipyretic agents should be given rou-

tinely to children receiving pertussis immunizations because the temperature may rise as high as 103 degrees. Encephalitis has been attributed to pertussis vaccination. (16)

#### POLIOMYELITIS:

The effectiveness of the Salk vaccine is beyond question in preventing paralytic poliomyelitis in our immunized population. It is a mixture of the three poliomyelitis viruses rendered non-infectious by formaldehyde. (18)

The National Poliomyelitis Surveillance Program of the Communicable Disease Center of the Public Health Service reports show the incidence of paralytic poliomyelitis in 1955 to be 9,796; in 1956, 6,196; and in 1957, 1,988. The incidence of paralysis was 4.4/100,000 under four years of age, 3.4/100,000 in the under one year old group and 5.7/100,000 in the one to two year old age group. (20) Because of the high incidence of paralysis in the very young poliomyelitis immunizations have been recommended for children six weeks or older. (4, 19) They have been shown to develop a protective immunity despite placental transferred antibodies.

Some investigators have used the poliomyelitis vaccine combined with the DPT vaccine in the same syringe just before injection. They found the antibody response to be adequate to all the antigens without interference. No untoward reactions have been reported. (21)

Procedure: Two injections of 1 cc. of vaccine a month apart beginning at two months of age followed by a third injection seven months after the second. Some investigators postulate that immunity may be lifelong but this seems to be contrary to any other immunization process.

Coriell and others have stated clearly that they feel booster poliomyelitis injections are probably indicated for the following reasons: (a) paralytic cases continue to occur in the triple vaccinated; (b) protection is proportional to the amount of antigen injected; (c) many children have received incomplete series, improperly spaced injections, or vaccine of poor potency; (d) there seem to be remarkably few reactions or contraindications to the vaccine. (20) The American Academy of Pediatrics Committee on the

control of infectious diseases in a Newsletter of April, 1958, stated that "a fourth injection, although not mandatory, was advisable this year in anticipation of the approaching 'Poliomyelitis season' for those who received their third injection more than one year earlier."

A decision on a permanent plan for future poliomyelitis booster shots should be deferred pending more research.

In the case of household contacts who have not had poliomyelitis shots or in the case of a population suffering an epidemic of poliomyelitis, gamma globulin should be used for their protection and not the first poliomyelitis injection. The gamma globulin was found to be fifty per cent effective in epidemic areas in 1953. If they have had previous poliomyelitis injections, only a booster would be indicated.

A living attenuated oral vaccine may be advantageous because it might confer permanent immunity and prevent alimentary reinfection with the poliomyelitis virus and subsequent spread to the rest of the population. Parenteral immunization does not prevent multiplication of the virus in the intestinal tract. Primary parenteral immunization for poliomyelitis of part of a group does not prevent the spread from the vaccinated to the unvaccinated. So to protect a population, vaccination of all would be desirable.

The cases of so called vaccine failure are complicated by the increasing recognition of poliomyelitis-like diseases such as those caused by ECHO and Coxsackie viruses.

#### RECOMMENDATIONS FOR NEW VACCINES:

Adenovirus vaccine, as made commercially, though effective in military installations, is not recommended for general use. It contains adenoviruses, number three, four and seven. Types four and seven have seldom been recognized outside the military. Type three causes non-bacterial pharyngitis and conjunctivitis. Vaccination with a potent adenovirus vaccine would probably prevent about six per cent of the common respiratory infections (about one or two illnesses) suffered in the first ten years of life. Present evidence does not warrant adenovirus im-

munization of such civilian groups as families or university student populations. (22) One objection is the very short immunity conferred by the present vaccine.

The Asian influenza vaccine's usefulness was limited, giving forty to fifty per cent protection according to Martin, reporting on the 1957 epidemic at the meeting of the American College of Chest Surgeons recently. Routine use of influenza vaccine of any composition is not recommended, except under unusual circumstances. (23) Only in the face of a possible severe epidemic as with the Asian influenza in 1957 and 1958, is its use feasible and warranted. Its use in the debilitated, chronically ill, or very susceptible individuals is indicated.

In the report of the Committee on the Control of Infectious Diseases of 1957, (4) certain immunization precautions were brought out which are as follows: (a) both needles and syringes must be sterilized between each injection either by dry heat for two hours at 170 degrees C., or by boiling in water for not less than fifteen minutes. This precaution is necessary to prevent the spread of infectious hepatitis and other diseases. (b) the skin of the patient and the stopper of the antigen container should be swabbed with two per cent tincture of iodine, a mercurial of equivalent strength, seventy per cent alcohol, or tincture of Zephiran Chloride (tinted). The two per cent tincture of iodine is preferred. (c) Antigens containing adjuvants should be given intramuscularly. (d) In general, fluid antigens are given subcutaneously. (e) Use only a dry needle for injection and follow injection with 0.1 cc. to 0.2 cc. of air. (f) Immunize only well babies. (g) Acetylsalicylic acid, one grain per year of age, should be given within an hour or two of injection and repeated four hours thereafter. (h) Fractional doses should be used in infants who convulse. Use 0.05 cc. to test tolerance. Phenobarbital may be used in addition to aspirin to prevent convulsions. (i) One should question the parents about fever, somnolence and local reaction following the first injection. If these are reported, the dose should be decreased appropriately. If convulsions or severe reactions are reported, single



antigens should be used in fractional doses.

There are certain contraindications listed in this same report. (4) These are: (a) any respiratory or other acute infection is reason for delaying injections. Prolonging the interval between injections even up to six months rarely interferes with the final immunity. (b) In infants who have cerebral damage, active immunization should be delayed until after one year of age. Single antigens in fractional doses are recommended. (c) An outbreak of poliomyelitis is reason for deferring elective immunizations for other diseases. If outbreaks of diphtheria, pertussis, typhoid, or smallpox coexist with poliomyelitis, then they cease to be elective. (d) Infants with eczema or other forms of dermatitis should not be vaccinated against smallpox because of the danger of producing generalized vaccinia. Siblings of these infants should not be vaccinated against smallpox unless the children can be placed in different buildings from the child with the skin rash for ten days.

The data on hand would suggest the following immunization schedule:

2 months	Polio	and DPT	
3 months	Polio	and DPT	
4 months		DPT	
5 months			Smallpox
10 months	Polio		
18 months		DPT booster	
2 years	?Polio		
4-5 years	?Polio	DPT booster	Smallpox
8-10 years	?Polio	DT (adult type)	Smallpox
every 4-5 years	?Polio	DT (adult type)	Smallpox

Looking into the future one finds the whole immunization field is changing rapidly. Soon we may have vaccines for many viruses such as the 2060 and J. H. viruses that cause many of the respiratory infections that are in the "common cold group". Preliminary work is being done with a measles vaccine. An extensive field trial of the poliomyelitis oral vaccine is being undertaken this summer in South America. A quadruple vaccine which will have diphtheria, tetanus, pertussis, and poliomyelitis combined for use in small infants will soon be commercially available.

## SUMMARY:

A resume of the current immunization practices have been presented and a suggested program for basic immunizations has been outlined. Some of the recent developments have been indicated. Constant review of immunization programs must be done because of continual changes and additions in immunological theory and practice.

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## ◆ *What's* NEW ◆

### Toxemia of Pregnancy

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Although toxemia has ceased to be the clinical problem that it once was — largely due to better understanding of the mechanisms involved and better management during the prenatal and intranatal period — it is still an extremely important clinical entity and, moreover, its fundamental cause eludes us all. Concerning the latter, however, important advances have been made in determining the physiopathology behind it, and this has brought us closer to the cause and, in turn, has helped considerably in the management. One of the fundamental disturbances here produced is an alteration of fluid metabolism in the body and retention of sodium by the kidneys.

It will be remembered that the composition of our bodies is approximately 70 per cent water and 30 per cent solids. Body water, and all electrolytes dissolved within, is divided by the cellular semipermeable membranes into intracellular and extracellular fluid. Extracellular fluid is found within blood plasma and

within fluid outside cells and outside the vascular tree, that is, the interstitial fluid. The electrolyte composition of extracellular fluid and of blood plasma is well known and this knowledge is important in many other conditions besides the one under discussion. The volume of extracellular fluid varies within certain well defined limits and is controlled by several compensatory mechanisms, including the kidneys.

During normal pregnancy there is some increase in the extracellular fluid and it has now been well established that during toxemia there is a much greater increase in the amount of extracellular fluid accumulated. Further, it is known that the chemical composition of the extracellular fluid is, for all practical purposes, the same in toxic pregnancies as in normal pregnancies. However, in toxic pregnancies there is a progressive decrease in plasma volume and progressive increase in extracellular volume. This, of course, manifests itself clinically as edema.

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Under normal circumstances in non-pregnant individuals, sodium excretion via the kidneys depends upon a balance between glomerular filtration and tubular reabsorption. During pregnancy, an increase in circulating steroid hormones is believed to stimulate renal tubular reabsorption of sodium and so the 50 per cent increase in glomerular filtration rate which also occurs in pregnancy may be a secondary mechanism which compensates for such an increase in tubular reabsorption. In preeclampsia it is noted that there is a marked decrease in glomerular filtration due to renal vascular spasm and it is this alteration that may account for the subsequent sodium retention. In review then, the edema sodium retention aspect of toxemia would begin with a decrease in the glomerular filtration rate due to an alteration of the renal vascular bed which will be discussed again in a moment. Associated with this is stimulation of renal tubular reabsorption of sodium which normally occurs during pregnancy and is felt due to increase in circulatory steroid hormones present. The retained sodium spills into extracellular fluid which accounts for retention of water in this space. The electrolyte composition of extracellular fluid is the same in both normal and toxemic pregnancies. The change is only in the amount and in the distribution.

We have already mentioned that in the toxic state during pregnancy vasospasm occurs in renal vessels and produces, we assume, the observed reduction in glomerular filtration rate through the kidneys. Other observable areas of the body have been shown to submit to vasospasm during the course of toxemia. A good example may be noted in the retina. Changes produced by toxemia in the retinal bed are easily observed with an ophthalmoscope and are well known to all. Frequent retinal examinations, incidentally, in the course of a toxic pregnancy are important not only to establish a baseline retinal picture but to evaluate management.

McCall has clearly demonstrated vasospasm in the cerebral circulation. He feels it is important to take note of this altered cerebral circulation in managing toxemia of pregnancy. For instance, he

feels that it is dangerous to use barbiturates and that magnesium sulphate or a combination of veratrum veride and apresoline (Unitensin) are at present the drugs of choice.

The uterine circulation as well seems to be inadequate in toxemia states and indeed may well be the basic initiating factor. It is known that the total uterine vascular system develops within the myometrium in early pregnancy. Beyond the twentieth week there is little or no new growth of vascular tissue and as the uterus expands and elongates the vascular system elongates or uncoils with it. The end result is that unless an adequate vascular system develops early in pregnancy the term placenta, situated as it is almost exclusively in the fundus, would seem liable to the development of ischemia. This has been shown to occur experimentally by Brown and others. That placental ischemia does occur in toxemia seems undeniable. Pathological changes in the toxic placenta have been shown to occur beyond doubt, and although these histological changes are not specific for toxemia, they are specific for anoxia. Further, a significant decrease in hormone production by the anoxic toxic placenta has been demonstrated.

In sum, the altered picture which in pregnancy produces toxemia would begin with inadequate vascular supply to the placental site followed by placental ischemia which alters placental histology and physiology.

Placental ischemia undoubtedly leads to the elaboration of a substance, and this substance in turn produces more or less generalized vasospasm throughout the body. The renal vasospasm so produced decreases glomerular filtration rate. At the same time renal tubular reabsorption of sodium is much greater due to an increase in circulating steroid hormones. This alteration of renal physiology exhibits as an end result the retention of sodium. Sodium, present in the extracellular space, draws water to it and thereby increases the extracellular volume — particularly the extracellular, extravascular compartment (the interstitial space)—and is manifested clinically as edema.

# MANAGEMENT

By all odds the most important phase of management of toxemia is its prevention. And there can be no doubt that adequate prenatal care is the management keystone. Meticulous prenatal care serves two important functions. In the first place, it allows us to instruct pregnant patients as to what a sufficient and proper diet consists of. Such a diet considers not only the restriction of sodium substances but the addition of high protein, high vitamin foods. Hamlin, in his excellent article on dietary instruction, feels that rather than hand patients rigid printed instructions which they will probably discard or ignore, we would do better to give them repeated slogans on each visit — which slogans they are likely to call to mind when they go to the table. Such slogans as “Shun the baker and cultivate the butcher” or “Avoid wheat and live on meat” or “Lay down the bread knife and take up the carving knife” are characteristic of what he means. Although these slogans are heavy with “corn” they certainly do not lack for “meat”.

The second important phase of antenatal care, of course, is the observation and recording of physical signs as pregnancy progresses. It is probable that a great many patients will exhibit excess weight gain and edema sometime before other signs of preeclampsia appear. Therefore, it is also probable that early in pregnancy, as early as in the twentieth week, even, patients who exhibit:

1. A rate of weight gain in excess of eight pounds in any ten week period before the thirtieth week
2. Slight tightening of the engagement and wedding rings and perhaps some edema of the legs
3. Whitening of the infraorbital skin due to subcutaneous edema of the lower eyelids.

Such patients are candidates for preeclampsia within the later stages of their pregnancy.

Patients who continually ignore their physician's warnings when these early signs appear should be hospitalized. If

this is not practicable, some other form of *rigid* control must be instituted.

When preeclampsia and eclampsia have actually supervened, active treatment is directed against the vasoconstriction which we have previously mentioned, and with mobilization and excretion of extra cellular water. The treatment out-lined by Asalli recently for both preeclampsia and eclampsia is probably as complete and timely as any. It will be reproduced here in its entirety.

## PREECLAMPSIA

1. Bed rest.
2. Take blood pressure and pulse for 20 min. to get a base-line.
3. Reserpine 5 mg. intravenously or a combination of reserpine and veratrum compounds.
4. Blood pressure and pulse every one-half hour for 3 hours and every 2 hours thereafter.
5. If the blood pressure does not fall 20 to 25 per cent below control values within one hour, give another 5 mg. dose of reserpine intravenously.
6. If despite the additional dose of reserpine the blood pressure remains high within 1 hour after the injection, switch to Apresoline 30 mg. intravenously or to veratrum alkaloids in the dose indicated by the manufacturer.
7. 24 to 36 hours later switch back to a combination of reserpine and veratrum. Repeat as necessary to keep the blood pressure 20 to 25 per cent below control.
8. Magnesium sulfate 50 per cent, 5 cc. every 8 hours intramuscularly for the first 24 to 48 hours. Repeat during labor.
9. Chlorothiazide (Diuril) 1000 to 2000 mg. daily for periods of 5 to 6 days, alternated with 2-day drug-free periods.
10. Fluids by mouth up to 3500 cc. If necessary 5 per cent glucose in water can be given intravenously.
11. Barbiturates 1½ to 3 gr. as needed to keep patient calm and comfortable and to sleep.
12. Diet containing 9.9 Gm. sodium chloride daily. Record intake and output.
13. When patient goes into labor, keep



treatment as before. Demerol and barbiturates for sedation.

14. Record patient's weight daily. Urinalysis every other day, less frequently when patient improves.

15. After one week of parenteral treatment, and if pregnancy is to be carried to viability, switch to oral therapy with a daily combination of rauwolfia, veratrum, and Apresoline.

16. If pregnancy is over 36 weeks and infant size judged to be viable, induction of labor with rupture of the membranes or with intravenous Pitocin is advised.

#### ECLAMPSIA

1. Same as in preeclampsia, in separate room.

2. Same as in preeclampsia, for about 5 minutes.

3. Apresoline 30 to 40 mg. intravenously. This can be repeated as often as necessary to keep the blood pressure 20 to 25 per cent below control values.

4. Blood pressure and pulse every 5 minutes for 2 hours and every half hour until patient is conscious.

5. If the blood pressure tends to return toward control values, Apresoline may be repeated, or reserpine and veratrum may be given intravenously. Reserpine alone, or the combination of reserpine and veratrum, may also be given if the patient does not respond well to the initial dose of Apresoline.

6. Barbiturate, 3 gr. intramuscularly or intravenously. This can be repeated as necessary.

7. After the patient is conscious and without convulsions, switch to intramuscular reserpine or a combination of reserpine and veratrum.

8. Magnesium sulfate 50 per cent, 5 cc. intramuscularly in each side, totaling 10 cc. every 6 hours.

9. Same after patient is conscious and after oliguria has subsided.

10. Intravenous 5 per cent glucose in water, 1500 cc. over patient's output. When patient is conscious, fluid by mouth.

11. Same after patient is controlled.

12. Same as in preeclampsia.

13. Same as in preeclampsia.

14. Same when patient is conscious. Urinalysis every day (first few days); blood carbon dioxide and blood urea nitrogen may be ordered. Eye-ground examination every other day.

15. Same as in preeclampsia.

16. Same as in preeclampsia. Cesarean section should not be performed in the acute phase of the disease and should be reserved for the patients in whom difficult vaginal delivery may be anticipated.

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# A TEACHING SEMINAR FROM THE UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE

## Diagnosis of Renal Disease\*\*

BEN I. HELLER, M.D.\*

### CERTAIN ASPECTS OF NORMAL RENAL FUNCTION

In a basal state in health the kidneys are perfused by one-fourth of the heart's output of blood equal to 1.2 liters of blood per minute or some 1700 liters of blood per day. The renal plasma flow is approximately 700 ml. per minute or 960 liters per day. This prolific blood supply is required to perform the prodigious feat of filtering 180 liters of plasma water per day or 130 ml. per minute. The percentage of plasma water which is filtered is about 20 per cent. Since the urine volume is only one or two liters per day, it is apparent that 99 per cent or more of the filtered plasma water is reabsorbed daily.

The regulation of water and electrolyte balance to ensure the constancy of composition and volume of the body fluids is a complex, dynamic state. The kidneys play the chief role in the maintenance of such constancy, but renal regulation is merely the end organ activity of such an involved process. This process is integrated by the cardio-vascular system, the pituitary, the adrenal glands, and other endocrine organs. Sodium homeostatic receptors are alleged to exist in the arterial tree and volume receptors intracranially, and evidence substantiating these premises is now accumulating. The interrelationship of the factors which affect renal function with the intrarenal mechanisms for the excretion and reabsorption of various substances is at present incompletely understood.

Complex enzyme systems located in the tubules are essential to the function of the kidney. In order to reabsorb substances

from the tubular lumen into the blood against a concentration gradient, energy is necessary. This is also true for the transport of large molecules from the blood to the tubular lumen. The energy required for tubular reabsorption and secretion is obtained from energy present in certain phosphate bonds. For this purpose adenylic acid and inorganic phosphates are conjugated in the tubular cells to form adenosine triphosphate (ATP). The potential energy present in the phosphate bonds of ATP is liberated by phosphatase activity and used for the processes of reabsorption, secretion, and synthesis performed by the tubular cells. When aerobic phosphorylation is inhibited by the administration of certain drugs such as dinitrophenol, the transport of phenol red, diodrast, and para-aminohippurate from blood to tubular lumen is inhibited.

The renal tubular cells are able to oxidize certain organic acids by a process of beta-oxidation. In many of these processes acetate is liberated and the excretion of large molecules is enhanced. The synthesis of certain compounds, such as hippuric acid from benzoic acid, also occurs. The extent to which failure of these renal tubular mechanisms of oxidation and synthesis contributes to the clinical syndrome of uremia is unknown. Since organic acid accumulation is characteristic of uremia, it is conceivable that some of the symptomatology may be on this basis.

From the standpoint of renal tubular cell selectivity the substances in the glomerular filtrate may be divided into three classes:

- 1) Substances which must be retained, such as glucose, vitamins, and amino acids, are reabsorbed almost completely.

\*Professor of Medicine.

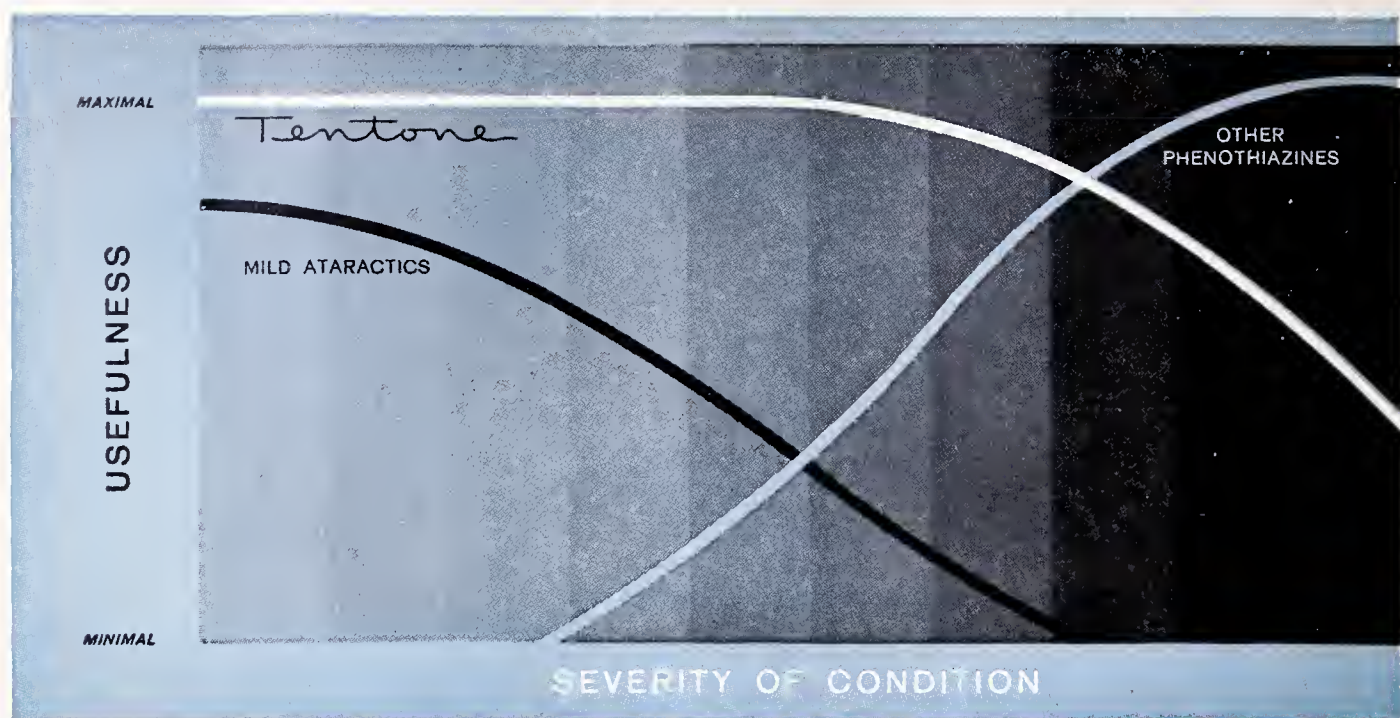
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ANNOUNCING



A HIGHLY EFFECTIVE  
TRANQUILIZER FOR  
EXTENDED OFFICE  
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**POSITIVE CALMING  
ACTION ADAPTED  
FOR LOWER RANGE  
OF EMOTIONAL  
DISORDERS**

The development of TENTONE® Methoxypromazine Maleate *Lederle* does not duplicate primary function of existing tranquilizers. TENTONE fills the need for a practical, potent agent for extended use in everyday practice (as illustrated above).

Action of TENTONE Methoxypromazine Maleate approaches that of the strong phenothiazines without their drawbacks. Calming response is positive and rapidly apparent to both patient and physician. However, as a basic phenothiazine modification, TENTONE allows full therapeutic application in the mild and moderate range of anxiety-tension and somapsychic disorders most usually seen in general practice.

**EXCELLENT  
TOLERATION—  
MARKED  
REDUCTION IN  
COMPLICATIONS**

Incidence of untoward reactions is exceptionally low and approximates the mild ataractic drugs. Reduction in sensitivity reaction, intestinal distress, blood, brain or liver toxicity is striking, particularly in the low dosage range. TENTONE exhibits greater freedom from depression and drug habituation. Physical and psychic orientation is usually preserved. Occasional drowsiness may be encountered, particularly in higher dosages. In moderate to more severe cases, this sedative effect may be desired.

TENTONE has thus been described as one of the easiest tranquilizers to handle in office practice. In indicated cases, the physician may be relieved of the patient's unnecessary concern over his own illness. In contrast to the previous types of drugs, complaints over induced distress or inadequate benefit are rare.



WHEN MORE THAN  
MILD SEDATIVE  
EFFECT IS DESIRED

Consequently, TENTONE is more useful than other ataractic drugs in two areas: (1) mild to moderate conditions—when more than mild sedative effect is sought, (2) middle range of moderate to severe cases—when less than psychopathology is involved.

*Indications include* ■ common anxiety-tension states ■ obsessive-compulsive behavior ■ neurosis ■ depression ■ situational anxiety and hysteria

*And the emotional components of:* ■ agitation ■ restlessness ■ tremors ■ insomnia ■ alcohol- and drug-withdrawal syndrome ■ hyperkinesia ■ prenatal anxiety ■ rheumatic disorders ■ dermatoses ■ menopausal syndrome ■ premenstrual tension ■ peptic ulcer, other g.i. disorders ■ asthma, other allergy ■ multiple sclerosis, arteriosclerosis ■ malignancy, other progressive diseases

POSSIBLE  
POTENTIATION OF  
ANALGESICS  
AND NARCOTICS

Since tranquilizing drugs may potentiate the action of pain-relievers, sedatives, and barbiturates, they should be used with caution in conjunction with them, or to achieve a greater response to these drugs in various conditions when desired. They may also be useful in reduction of effective dosage to better tolerated, or non-habituating levels.

ADAPTABLE  
LOWER DOSAGE  
RANGES

Dosage must be individualized to severity of condition and response desired.

*In mild to moderate cases:* varies from 30 to 100 mg. daily.

*In moderate to severe cases:* from 75 to 500 mg. daily.

In psychotic or institutionalized patients, TENTONE may be useful as a substitute when toxicity precludes effective dosage of other phenothiazines, or as maintenance after hospitalization. Dosage may range from 100 to 1500 mg. daily in divided doses.

Supplied: 10 mg., 25 mg. and 50 mg. tablets



LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

## DIAGNOSIS OF RENAL DISEASE

2) Metabolites for which the body has no further need, such as urea, uric acid, and creatinine, are largely excreted.

3) Water and electrolytes are reabsorbed differentially as required to maintain the constancy of composition and volume of the body fluids. Normal renal function is characterized by an amazing degree of compensation and flexibility to widely varying intakes of fluid, electrolytes, and protein. A further characteristic of normal renal function is a fairly rapid rate of adjustment to such dietary variation.

One of the chief functions of the kidney is the maintenance of a normal bicarbonate concentration in the extracellular fluid. There are three important factors in the performance of this function:

1) The filtered bicarbonate is practically completely reabsorbed. This reabsorption is normally so efficient that only a few milliequivalents (mEq.) are excreted daily although 5000 mEq. are filtered each day. Bicarbonate reabsorption is dependent upon the exchange of sodium ions for hydrogen ions made available from the hydration of carbon dioxide under the influence of the enzyme carbonic anhydrase. The partial pressure of carbon dioxide on extracellular fluids is an important determinant in bicarbonate reabsorption. When the concentration of carbon dioxide in body fluids is low, as in respiratory alkalosis, more bicarbonate and cations are excreted in the urine. When the concentration of carbon dioxide is high, as in respiratory acidosis, bicarbonate reabsorption is markedly enhanced. This explains the acid urine of patients with pulmonary emphysema in

whom the serum bicarbonate concentration is considerably above normal.

2) Acidification of urinary buffer salts occurs chiefly through the differential urinary excretion of mono-sodium acid phosphate. In the glomerular filtrate and in the serum at pH 7.4 the concentration of disodium phosphate is four times that of mono-sodium phosphate. Urinary acidity is largely determined by the concentration ratio of these two forms of phosphate. In a urine of pH 6.6 the concentration of acid phosphate is one and one-half times that of alkaline phosphate.

3) Ammonia formation and secretion by the distal tubule permits the conservation of an equivalent amount of sodium.

Recent evidence indicates that these three factors are interdependent and work together through a hydrogen ion-sodium ion exchange mechanism in the distal renal tubule.

### CORRELATION OF CLINICAL RENAL FUNCTION TESTS WITH SPECIFIC FUNCTION TESTS

Clinical tests of renal function attempt to evaluate four physiological defects which are characteristic of impaired renal function. These are as follows:

1) Inability to form a concentrated urine.

2) Retention of metabolites.

3) Decreased clearances of urea and creatinine.

4) Decreased excretion of phenolsulfonphthalein dye (PSP).

The correlation between these tests and the specific tests of renal function are noted in Table I (after Earle).

Table I (after Earle)

Function	Specific Measurement	Clinical Test
Glomerular Filtration	Inulin Clearance	Urea Clearance Creatinine Clearance Blood Urea
Renal Plasma Flow	PAH Clearance	PSP Excretion
Proximal Tubular Capacity	Excretory-Tmpah Reabsorption-TmG	PSP Excretion (when tubular function is impaired)
Distal Tubule	Concentration-dilution Electrolyte Balance Acid-Base Balance Ammonia Formation	Same
Severe Tubular Damage (Oliguria or Anuria)	Back-diffusion	Urea Clearance Blood Urea



The clinical tests are extremely useful for the evaluation of renal function if they are properly performed and correctly interpreted. The urea clearance averages 75 cc per minute whereas the inulin clearance averages 131 cc per minute. A simple calculation indicates that about 43 per cent of the urea which is filtered is reabsorbed. There will generally be a good correlation between urea clearance and the glomerular filtration rate. It has been stated that nitrogen retention will occur when the urea clearance is about 30 per cent of normal. This is, however, extremely variable since the dietary composition of protein and carbohydrate, the fluid intake, and the urine volume are also important factors.

The phenolsulfonphthalein (PSP) excretion test is performed by injecting one ml. of the dye intravenously. The intramuscular injection leads to inaccuracies because of irregular absorption. Since diseased kidneys may clear a normal amount of dye with repeated exposure to the dye in the circulating blood, as in the one and two hour test, fractional PSP excretion is much more informative. The 15 minute and 30 minute excretion tests may be considered normal if 25 per cent or more of the dye is excreted in 15 minutes with an additional 15 per cent in the second 15 minutes.

#### RENAL FUNCTION IN RENAL DISEASE

There is generally a good correlation between renal dysfunction and renal pathology until the latter phases of renal disease are reached. In Table II are listed some of the specific renal function determinations in disease. The filtration fraction is a measure of the amount of plasma water which is filtered each minute. As is to be expected it is frequently markedly reduced in primary glomerular diseases such as acute glomerulonephritis. The filtration fraction is increased in patients with essential hypertension and congestive heart failure, indicating that the glomerular filtration rate is reduced to a lesser degree than the renal plasma flow.

Table II Renal Function in Renal Disease

Disease	RPF cc/min	GFR cc/min	FF %	Tmpah mg/min	Tmg mg/min
Essential Hypertension	277	60	22	38	
Acute Glomerulonephritis	458	33	6	41	
Chronic Glomerulonephritis	323	27	8.3	29	
Nephrotic Syndrome	708	125	18	96	
Intercapillary Glomerulonephritis	199	40	20	32	131
Congestive Heart Failure	220	92	41	31	

Correlation of the clinical renal function tests with the specific measurements of renal function is essential to accurate diagnosis. Thus, an incorrect diagnosis of acute glomerulonephritis may be suspected when the tests of renal function reveal a greater reduction of renal plasma flow (diminished PSP excretion) than glomerular filtration rate (urea clearance). Such a pattern is frequently found in chronic pyelonephritis, an inflammatory disease of renal interstitial tissue. Re-investigation of the patient may lead to the proper diagnosis of chronic pyelonephritis. The correlation of function with structure is one means of reaching a correct diagnosis of renal disease. In pre-terminal or terminal renal disease, on the other hand, the disorganization of structure may be so intense that the renal function tests lack such specificity and reliability.

#### CLASSIFICATION OF RENAL DISEASE

The following classification of renal disease is suggested as a diagnostic framework in the evaluation of patients with renal disease. There has been no attempt to be complete in this classification.

##### A. Glomerular Disease

1. Diffuse glomerulonephritis.
2. Membranous glomerulonephritis (nephrotic syndrome).
3. Amyloidosis.
4. Toxemia of pregnancy.

##### B. Tubular Disease

1. Acute Tubular necrosis.
2. Tubular acidosis without glomerular insufficiency.

C. Vascular Disease

1. Primary hypertension.
2. Renal infarction.
3. Congestive heart failure.
4. Polyarteritis nodosa.
5. Disseminated lupus erythematosus.
6. Scleroderma.

D. Metabolic Disease

1. Hyperparathyroidism.
2. Hypervitaminosis D.
3. Milk-alkali syndrome.
4. Metabolic alkalosis with hypopotassemia.
5. Nephrocalcinosis.
6. Gout.
7. Diabetes mellitus.

E. Diseases of Interstitial Tissue

1. Pyelonephritis.
2. Diabetes mellitus.
  - a. Pyelonephritis.
  - b. Acute Necrotizing papillitis.
3. Blood dyscrasias.

F. Obstructive Uropathy.

G. Congenital Anomalies.

EFFECTS OF RENAL DISEASE

For the purpose of simplicity the effects of renal disease may be divided into the three following categories: 1) Diminished renal function 2) azotemia 3) uremia.

DIMINISHED RENAL FUNCTION

The pattern of renal dysfunction, as already noted, is variable and dependent upon the type of renal disease pres-

ent. Whatever the nature of the defect, in moderately advanced renal disease there is an inability to compensate and a marked narrowing in the limits of renal flexibility. There is a marked slowing in the rate of adjustment to varying conditions. For example, although the 24 hour urine volume may be large, there may be a marked blunting in water diuresis in response to acute water loading. In chronic glomerulonephritis the response to an acid load is characterized by excessive cation excretion and diminished hydrogen ion secretion.

Polyuria and hyposthenuria are characteristic findings early in renal failure. Water diuresis and electrolyte loss may occur before there are any symptoms of uremia. The patient may remain compensated for long periods of time by increasing the intake of fluid and electrolytes.

AZOTEMIA

It is reasonable to differentiate azotemia, or nitrogen retention, from uremia. When renal failure is insidious in onset and slow in progression, a considerable degree of azotemia may be noted in the absence of symptoms. It is now well established that urea has no role in the clinical syndrome of uremia.

UREMIA, A SYMPTOM COMPLEX

Uremia may be considered as a symp-

Table III Symptoms and Signs of Uremia

System or Organ	Symptom	Sign
Skin	Pruritus	Brownish-gray discoloration, eczematoïd or maculopapular dermatitis, uremic frost, purpura.
Eye	Decreased visual acuity	Retinopathy (may be absent if blood pressure normal).
Blood	Bleeding phenomena, weakness, pallor	Bleeding from any orifice; normochromic or hypochromic, normocytic or macrocytic anemia.
Heart	Dyspnea, orthopnea, cough, pink or bloody sputum	Hypertension, classic signs of congestive failure, pericarditis with friction rub, cardiac arrhythmias.
Respiratory	As above	Sighing respirations, yawning, acidotic respirations, Cheyne-Stokes respirations.
Gastrointestinal Tract	Anorexia, nausea, vomiting, diarrhea, weight loss	Uremic odor, stomatitis, psoriasis, hematemesis, melena, cachexia.
Central Nervous System	Headache, apathy, abnormal fatigability, drowsiness, insomnia, irritability, depression	Hiccoughs, muscle irritability, convulsions rare, coma terminally, spinal fluid may show elevated cells, protein, and pressure.



tom complex with varying symptoms and signs involving all or some of the organ systems in the body. It is characterized further by a wide spectrum of electrolyte and water imbalance, by abnormal cell membrane permeability, and by the retention of metabolites. The symptoms and signs of uremia are noted in Table III.

It seems unnecessary to assume that a primary toxic factor or factors are responsible for the symptoms and signs of uremia, a disease state characterized by profound water and electrolyte imbalance, abnormal cell membrane permeability, and retention of metabolites. The view that uremia is a state of severe metabolic imbalance rather than a toxemia seems reasonable.

## SUMMARY

Structural and functional changes in patients with renal disease are closely correlated. Therefore, a knowledge of renal physiology and of pathologic physiology in disease will permit more accurate diagnosis.

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# Resolution

WHEREAS, Doctor Newnan Burgess Burch departed this life October 13, 1958; and,

WHEREAS, his 24 years of residence and professional service in this community have been years of untiring service to this community, we, the members of the Hot Springs-Garland County Medical Society deeply regret his passing. He was born in Fulton, Mississippi November 9, 1887, graduated from the University of Tennessee College of Medicine in 1917 and practiced medicine for the following 15 years in Hughes and Forrest City, Arkansas. In 1932 he went to New Orleans and was a Fellow in Ophthalmology and Otolaryngology at Tulane University of Louisiana Medical School. In 1934 Doctor Burch moved to the city of Hot Springs where he limited his practice to "eye, ear, nose and throat". After 14 years association with the Wade Clinic he established his own clinic at 1622 Central Avenue in Hot Springs.

Doctor Burch was a member of the American Medical Association, Arkansas

Medical Society, and in 1956 was president of the Eye, Ear, Nose and Throat Section of the Arkansas Medical Society. He was a member of the Hot Springs-Garland County Medical Society, and held the title of deacon emeritus of the Central Baptist Church at the time of his death. Doctor Burch was also a Mason and a Shriner.

WHEREAS, Doctor Burch, as a general practitioner for 15 years and an Eye, Ear, Nose and Throat Specialist for 24 years, gave unstintingly of himself and his professional skill for 39 years and was held in highest esteem by the community and his colleagues.

THEREFORE, BE IT RESOLVED that the Hot Springs-Garland County Medical Society express to his wife and family the high regard in which he was held by the members of the Society, and extend to them sincere sympathy in this, their hour of sorrow.

BE IT FURTHER RESOLVED that a copy of this resolution be inscribed on the records of our Society, a copy be sent to his wife, and a copy to The Journal of the Arkansas Medical Society.



# What Is Your Diagnosis?



FOR ANSWER SEE PAGE 549



## CAUSES OF NEONATAL MORTALITY ARKANSAS, 1957

<u>CAUSE OF DEATH</u>	<u>NUMBER</u>	<u>RATE PER 1,000 LIVE BIRTHS</u>
IMMATURITY		
UNQUALIFIED	201	<div></div> 4.7
ASSOCIATED	190	<div></div> 4.5
ASPHYXIA & ATALECTASIS	138	<div></div> 3.3
CONGENITAL ABNORMALITY	88	<div></div> 2.1
BIRTH INJURY	79	<div></div> 1.9
ILL DEFINED & UNKNOWN	72	<div></div> 1.7
PNEUMONIA, ETC.	26	<div></div> 0.6
ERYTHROBLASTOSIS	20	<div></div> 0.5
OTHERS	51	<div></div> 1.2

### ARKANSAS STATE BOARD OF HEALTH DIVISION OF MATERNAL & CHILD HEALTH

Neonatal mortality rates are defined as the number of deaths of infants under 28 days of age per 1000 live births in a specified period, which is usually a year. This rate, for the United States as a whole, has declined from 44.1 in 1916 to 19.1 in 1955. This drop has been significant, but has not been as marked as the decline in the post-neonatal mortality rate (deaths between 28 days and 1 year of age per 1000 live births), which has gone from 56.9 in 1916 to 7.3 in 1955.

The decline in these rates is considered to be due to control of diarrhea and infectious disease, and to general socioeco-

nomie improvement. These factors have had their greatest effect in the post-neonatal period. Neonatal mortality at present is due chiefly to prematurity, asphyxia and atelectasis, birth injury, congenital malformations, and other diseases of early infancy. These conditions are incompletely understood and therefore difficult to prevent or treat.

In 1957, the neonatal death rate for Arkansas was 15.9 for the state as a whole; 14.4 for white infants; 19.1 for non-white infants. The neonatal death rate for the United States in 1956 was 18.9. Non-reporting of deaths of infants delivered at home may make the reported Arkan-

\*Sponsored by Arkansas State Board of Health.

sas rate lower than it actually is. About 15 per cent of Arkansas births in 1957 occurred outside hospitals.

There were 675 neonatal deaths in Arkansas in 1957. Prematurity was listed as the underlying cause in a little less than  $\frac{1}{3}$  of the cases and as an associated cause is an equal number of cases. A relatively large number of deaths (72 out of 675) are listed under "ill-defined and unknown conditions". Some of these are deaths occurring without a physician in attendance.

Particularly in the case of infant deaths, the manner in which the physician lists etiologic factors determines the way a death is coded. For example, the death of a 2 pound infant whose mother had a placenta praevia would be listed as due to prematurity if the physician indicated

this as the underlying cause of death. If he listed placenta praevia as the underlying cause leading to prematurity and death, the death would be coded under birth injury with prematurity associated. Thus, the full force of prematurity on neonatal mortality is best reflected by considering all deaths due to or associated with prematurity. The causes of death which can be subcoded for association with prematurity are: postnatal asphyxia and atelectasis, birth injuries and other diseases of early infancy. Deaths due to congenital malformations are not subcoded for association with prematurity.

## References

1. Arkansas State Board of Health, Division of Vital Statistics.
2. **Perinatal, Infant, Childhood, and Maternal Mortality**, Children's Bureau Statistical Series, No. 50, 1958.



## Diabetes Mellitus

ALFRED KAHN, JR., M.D.

Diabetes mellitus is one of the most studied of all endocrine diseases. Since the discovery of insulin by Banting and Best many notable contributions have been made in this field. Perhaps less spectacular, but still of great importance, has been the prolongation of life of diabetic patients who have followed strict programs outlined by such investigators as Joslin. There is no doubt that uncontrolled diabetes shortens expectancy, and well controlled diabetic programs are compatible with near normal expectancy in a large percentage of cases. Certain diabetics can obtain life insurance, although not at standard risk premiums.

The full understanding of the metabolic defect in diabetes still eludes us. The work of the Coris showing the relationship between insulin and hexokinase was thought for a time to be the most important defect in the production of diabetes mellitus. More recently, it has been demonstrated that insulin has functions in passing glucose through cell membranes. A common denominator which will account for the total metabolic defect in diabetes has not been found.

Early discovery of diabetes mellitus will occupy an important position until the side effects of diabetes such as vascular disease, etc., can be reversed. This emphasizes the premium placed on early diagnosis. Conn has recently devised a test to detect a latent diabetic trend prior to diagnostic changes in the blood and urine; this test makes use of the fact that adrenal cortex steroids tend to physiologically counteract some insulin effects. Unger and Madison (Journal of

Clinical Investigation, Vol. 37, page 627, May 1958) have found the response to intravenous Tolbutamide, currently used as an oral hypoglycemic agent different in diabetic and non-diabetic patients, intravenously there appeared to be a prompt blood sugar fall in non-diabetics whereas in diabetics the fall was slow.

Insulin itself has been under much study. A fraction of commercial insulin was found several years ago that actually increased the blood sugar level; this substance, glucagon, has been isolated from pure insulin and investigated. Its source is thought to be the alpha cells of the Islets of Langerhans. The exact method whereby it elevates the blood sugar has not been clearly defined. The inhibition of insulin action has been studied by Skom and Talmage, who point out that this may be performed by competition with or antagonism of cellular function of insulin, enzymatic destruction, and binding of insulin to circulating protein; these latter authors have studied non-precipitating insulin antibodies in diabetes and curiously found that insulin binding of sera did not bear a relationship to the insulin requirement of the patient. The relationship of insulin to the metabolism of fructose has been studied; contrary to the need for insulin to metabolize glucose, it is not necessary in the metabolism of fructose. Much hope was held for clinical benefit from using fructose but its use has been quite limited.

Although the life expectancy of diabetics has been lengthened by careful control of the disease much basic research remains to be done in this interesting, fairly common disease.

## Medicine in the News

### Doctors' Business Practices Get Professional PR Criticism

The other day we received a letter from a public relations man whose personal brush with a medical group's business methods prompted him to give some professional advice — gratis.

The man's wife had recently undergone surgery and he had been incensed to find the surgeon's bill placed alongside her hospital bed four or five hours after the operation. This practice plus the answers he received to his letter of complaint, he felt, left something to be desired in at least one group of doctors' public relations program. So he paid his bill but included this advice:

"Medical people should learn that no matter how much they want to operate like a commercial business, to sell services as one does shoes, they can never turn this trick because doctors are called in when people are in trouble. In an emotional situation, business logic disappears. Even if doctors are right from a purely business point of view they cannot escape the fact that the recipient of the services does not view it as a business situation at the time of crisis."

The gist of the man's recommendation is pure and simple finesse. Medical business practices should never be so crass that they shock perfectly intelligent and cooperative patients. Letters of complaint (no matter who is at fault) should never be answered curtly or in a tone of indignant righteousness.

Physicians should remember that one doctor or medical secretary who treats a patient rudely can erase the good impression created by ten thoughtful colleagues.

### Senators May Ignore HEW's Views On International Research Bill

The chairman of the Senate Labor and Public Welfare Committee, Senator Hill (D., Ala.) still favors a new National Institute for International Medical Research, despite the Administration's stand that its creation would cause too

much rigidity in the expanded program of international health and medical research envisioned in the Health for Peace Act (S. J. Res. 41). Hill is one of 58 Senators of both parties pushing the bill. He indicated committee Democrats would insist on the new institute and a \$50 million a year authorization for the program after Secretary of Health, Education and Welfare Flemming presented the Administration's views. Flemming also questioned an authorization of that size, saying it might lead other nations to expect too much of the U. S. He urged that the question of money be left open, but Senator Hill and other committee members hinted the \$50 million figure would be kept in the measure.

The Senate bill has received some impressive indorsements from organized medicine and leading medical scientists during hearings by the Labor and Public Welfare Committee. Dr. Gunnar Gundersen, of La Crosse, Wis., president of the AMA, offered "full support and assistance" to the setting up of the institute and the creation of a National Advisory Council for International Medical Research.

### Dr. Richardson Elected President of American Academy of General Practice

Dr. Fount Richardson, of Fayetteville, was installed as President of the American Academy of General Practice on April 8, 1959, in San Francisco, California, after being unanimously elected by the Congress of Delegates in March. Dr. Richardson is eminently qualified for the position, and Arkansas Medicine takes justifiable pride in the well-deserved honor accorded him.

### Atomic Energy Commission Reports On Radioactivity in Wheat

Statement on Strontium 90 in Minnesota wheat made before the Joint Committee on Atomic Energy during the authorization hearings, February 27, 1959, by Willard F. Libby, member U. S. Atomic Energy Commission:

The Strontium 90 content of wheat is a matter of real concern to us. There is nothing good about radioactive fallout and it has been our constant effort to reduce



it to the minimum in keeping with necessary weapons development programs. We welcome the interest of everyone willing to help us study it and have a system of publication and dissemination of the information which we hope is good. A particularly comprehensive document was issued recently. It is a nearly complete summary of U. S. data up till about last summer and is available through the Department of Commerce Office of Technical Services. It is the Health and Safety Laboratory Report No. 42, entitled, "Environmental Contamination from Weapons Tests."

The high levels found sometimes in wheat and rice and other grasses and vegetables apparently are due to a particular circumstance. These plants apparently pick up more fallout from the rain falling directly on the leaves than from the roots and the soil. As a consequence their level depends more on the rate of fallout than it does on the total accumulated fallout in the soil, though I hasten to add that there definitely is soil pickup. The soil pickup, however, does not lead to the large fluctuations with seasons of the year that are found in these grasses and lies at lower values than the peaks which direct leaf pickup can attain during a period of intense nuclear weapons testing when the rate of fallout can be particularly high for a short time. In other words, a high value may be followed by lower values if the rate of fallout is lower during the later growing seasons due to the timing of nuclear tests.

We are very concerned, however, by the amount of Strontium 90 found in these products and by the fact that occasionally samples are found which exceed the levels which are generally acceptable for a steady diet. Actually, of course, the general average food level is the important matter and we can say that this level is well below the maximum permissible level as given by the National Committee on Radiation Protection.

To summarize, then, the high values in wheat probably are due largely to surface pickups from particular rains and are not expected to show a steady rise, except for the relatively smaller soil pickups, unless rates of testing exceeding the

very heavy ones of last year occur again and I assure you that it is our policy to do everything to keep radioactive fallout outside the test areas to the very minimum.

### **Many Doctors Affected By Tax Court Decision**

From the Washington Report on the Medical Sciences:

Recent ruling by U. S. Tax Court is of importance to those legions of physicians and dentists who take graduate training of one kind or another each year. While court's decision in this case lays down no general rule, it may prove to be an added incentive particularly to general practitioners to strive for greater professional breadth.

The facts, briefly, are these: Dr. John S. Watson, an internist, of Worthington, Ohio, underwent psychoanalysis and studied psychiatric techniques so that he might be a better practitioner of internal medicine. In 1954-55, training and travel expenses approximated \$9,000, which he deducted as a business outlay. This was disallowed by the Commissioner of Internal Revenue. Dr. Watson appealed to Tax Court.

Ordinary and Necessary:

Before the Tax Court, the Commissioner held that it is not "customary" for a doctor to spend money for analysis and psychiatric training, therefore Dr. Watson's expenditure did not qualify as an ordinary and necessary expense for tax purposes. But this did not impress court, which said in part:

"It is in the realm of common knowledge that many physicians ordinarily continue to enlarge their medical education after their fundamental training has been completed and they have embarked on their practice . . . He (Dr. Watson) took the course, not for the purpose of becoming a specialist as a psychiatrist, but for the purpose of better carrying on his own practice . . . We hold the claimed deductions should be allowed." And that, it might be added, is final.

### **AMA Reports Progress on Aged Health Care Program**

"Solid progress" was the key phrase in the first report to Congress on AMA's

program to improve the health care of the nation's aged population. Dr. Leonard W. Larson, chairman of AMA's Board of Trustees, used the phrase in a letter to the chairman of the House Ways and Means Committee, Rep. Mills (D., Ark.), in which he said development of new insurance programs and expansion of existing lower cost protection for persons 65 and over are moving forward "even faster than many of us would have dared hope only a few months ago." Dr. Larson emphasized that state and local medical societies are acting "promptly and decisively" to carry out the program. AMA is also working closely with commercial insurance companies. The Ways and Means Committee has before it a bill by Rep. Forand (D., R. I.) to provide hospitalization and surgical services for persons eligible for OASI benefits through the social security system (H. R. 4700). Higher social security taxes would result. Wilbur Mills, chairman of the House Ways and Means Committee, announced the following Social Security Subcommittee: Burr Harrison (D., Va.) chairman; A. Herlong, Jr. (D., Fla.); John Watts (D., Ky.); Lee Metcalf (D., Mont.); Thomas Curtis (R., Mo.); Jackson Betts (R., Ohio) and Albert Bosch (R., N. Y.).

#### **Dr. Paul Henley Appointed to Important AMA Committee**

Dr. Paul Henley of El Dorado, Arkansas has been appointed to the five-man national Committee on Medical Discipline. This Medical Disciplinary Committee of the American Medical Association will consider means and methods of dealing with various abuses on the part of a small percentage of doctors, such as overcharging, abuse of insurance companies, unnecessary surgery and hospitalization, etc. The committee will hold its first meeting April 17 in Salt Lake City, Utah.

#### **House Committee Approves Housing Bill; Goes to Rules Committee**

House Banking and Currency Committee Feb. 26 approved a slightly different version of the Senate-passed omnibus housing bill for eventual House consideration. Both bills authorize proprietary

nursing homes to seek FHA loan guarantees on new construction or renovation up to 75 per cent of the project cost. Unlike the Senate bill, the measure does not provide any appeal provision when a nursing home is refused a certificate of need by the state Hill-Burton authority. The Senate bill permitted the applicant to appeal a turndown, with the final decision then resting with the Federal Housing Administrator. The bill now goes to the House Rules Committee where it faces an uncertain future.

#### **Public Health Consultant Questions A.E.C. Radiation Safety Role**

Dr. Russell H. Morgan, professor of radiology at Johns Hopkins University, is among those who question the Atomic Energy Commission's dual function of developing atomic energy and determining the health and safety factors involved. Dr. Morgan recently told a Joint Congressional Atomic Energy Subcommittee "there is no such thing" as a safe radiation level, despite widely accepted belief to the contrary. He heads a special advisory committee on radiation of the U.S. Public Health Service which soon will recommend a broad program to control and measure the total radiation being received from fall-out. The report will deal with medical treatment. The subcommittee which received his testimony is studying radiation hazards in relation to possible new legislation in industrial and other fields.

#### **American College of Radiology to Produce Radiation Protection Motion Picture for Physicians**

Chicago — A motion picture illustrating the medical aspects of radiation, including protective measures in diagnostic radiologic examinations, will be distributed soon by the American College of Radiology to the nation's physicians.

Supervising production of the 16 mm., half-hour color film will be a special committee of the American College of Radiology under the chairmanship of Wendell G. Scott, M. D., professor of clinical radiology, Washington University School of Medicine, St. Louis, Mo.



## President Approves New VA Bed Policy

President Eisenhower has given his approval to a new Veterans Administration hospital bed policy which VA Chief Sumner Whittier calls "a real milestone in the hospitalization of our nation's veterans." At the same time it strengthens the hand of VA in its disputes with the Budget Bureau and veterans groups on bed numbers and bed policies. The policy was outlined to the House Veterans Affairs Committee recently and met general approval. It includes:

1. The President sets a 125,000 authorized bed capacity in VA installations, for service-connected cases and for non-service-connected cases unable to defray expenses and where beds are available. Ratio today is about 60 per cent non-service-connected and 40 per cent service-connected. Mr. Whittier says the gap in these percentages will continue to widen because service-connected load will decline.

2. Greater flexibility in locating beds where need is greatest. In other words, the administrator can shut down a hospital for lack of patients or inability to recruit personnel, and have them transferred to another facility.

3. Authority to shift utilization of beds, say from tuberculosis to neuropsychiatric cases. In 1950 VA had 16,195 TB beds in operation; last year this had declined to 10,250.

## \$13,500 Offered Nation's Science Teachers In Star Awards Program Closing Dec. 15

WASHINGTON, Feb. 16 — Some \$13,500 in awards — double the amount given last year — will be offered to the nation's science teachers this year in the expanded Science Teacher Achievement Recognition (STAR) awards program, it was announced by the National Science Teachers Association. NSTA, a department of the National Education Association, is sponsor of the program.

The awards, conducted under a grant from the National Cancer Institute of the National Institutes of Health, are designed to improve the teaching of science and in turn create the bonus effect of interesting

students in the study of scientific subjects. STAR '60 is encouraging collaboration of science teachers and practicing scientists in the development of joint teacher-scientist as well as individual teacher entries.

## Rural Communities Must Solve Own Problems

WICHITA, Kan. — The need for individual communities to solve their own rural health problems — whether they be those of the aging population or the lack of physicians — was outlined by two dozen speakers at the recent (March 5-7) 14th National Conference on Rural Health, sponsored by the American Medical Association.

The current trend toward socialized health care cannot be reversed merely by preaching against it, according to Earl L. Butz, Ph.D., dean of agriculture at Purdue University, Lafayette, Ind.

"Aggressive community participation in positive action programs is the best answer to the philosophy held by some people that 'Washington will take care of my social security and welfare,'" he said.

Private enterprise and private initiative must be kept as the "senior partner" in local activities and government, Dr. Butz said, adding that if those services a community decides it must have are not provided by local people and local organizations, they will be provided by the government.

"We must be ever vigilant that our local communities assume the responsibilities put upon them by our private enterprise system," he concluded.

Examples of local enterprise were presented by J. D. Smerchek of the Kansas Farm Bureau, Manhattan, and Roy Battles, assistant to the master of the National Grange, Washington, D. C. Both groups have active rural health programs in which rural persons are — in the words of the A.M.A. Council on Rural Health — helped to help themselves to better health.

One area in which communities can — and must — help themselves is that of meeting the problems of the aging population, according to Aubrey D. Gates, director of the A.M.A. Division of Field

Services. Each community has the resources, the courage and the determination to meet the problems of this group.

The first step in meeting the needs of the aging is an inventory of community assets in the form of its elder citizens — their number, their problems, and their experiences that can be used by the community. Then their needs must be measured and decisions made about how and what is necessary to meet them.

Gates pointed out that many steps are being taken to help communities meet the needs of their aged citizens. These include requests by the A.M.A. that the Congress make available funds to help in the construction of community nursing homes; plans and suggestions offered for building and maintaining safer, more modern facilities; plans for visiting nurse service; suggestions for better home care, and plans for more adequate insurance for the aged.

He urged churches and other organized community groups to help in developing programs for the aged. State committees of doctors interested in rural health and aging may be contacted for help and advice.

Dr. Franklin D. Murphy, chancellor of the University of Kansas, Lawrence, decried the "great perversion of values" now occurring in the United States. This "deadly disease" must be fought through the conservation of human talent and its proper application, he said. We must do more to "avoid waste of human resources, both of mind and body."

As one example of this conservation and application, he believes that in rural America there must be better planning to provide area medical services. He suggested a large general hospital in one community with smaller satellite hospitals in the periphery, with patients flowing freely in both directions. In this way, costly duplication of facilities can be avoided and maximum use can be made of limited personnel and talent.

#### **Keogh Bill Goes to Senate: Timetable Uncertain**

With surprising ease, the House dispatched to the Senate the Keogh-Simp-

son measure for tax deferral by the self-employed of up to \$2,500 annually. Although there were rumblings that the legislation might encounter stiff resistance due to the recent stand of the administration against the bill, only some 15 or 20 lawmakers of more than 200 house members on the floor shouted "no" on the voice vote tally. Opponents decided not to press for a roll call. The big question in the Senate is whether backers will push for hearings this year or wait until next session when the budget issue may be more settled. A bill stays alive, of course, for the entire two-year term of a Congress, but must start all over again through the entire legislative process if not enacted at the end of a Congress. There are almost two entire sessions now for consideration of the measure in the Senate, unlike last year when Sen. Harry Byrd (D., Va.), chairman of the Senate Finance Committee, refused to chart hearings on the house-passed bill on grounds it was too late in the session.

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## **ANNOUNCEMENTS**

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### **Third International Congress Of Physical Medicine**

The Third International Congress of Physical Medicine will be held in Washington, D. C., from August 21 through August 26, 1960. Papers will be presented in all fields of medicine and surgery, together with other aspects of rehabilitation. Delegates are expected from 30 countries. For further information concerning the Congress write Walter J. Zeiter, M. D., Secretary-General, or Dorothea C. Augustin, Executive Secretary, Third International Congress of Physical Medicine, 30 N. Michigan Avenue, Chicago 2, Illinois.

### **Association of Military Surgeons Of the United States**

The 1959 Convention of the Association of Military Surgeons of the United States will be held at The Mayflower Hotel, Washington, D. C., on November 9, 10, and 11, 1959.



### First International Medical Conference On Mental Retardation

The First International Medical Conference on Mental Retardation will be at The Eastland Hotel in Portland, Maine on July 27 through 31, 1959. For further information address Conference Secretary, International Medical Conference on Mental Retardation, c/o Division of Maternal and Child Health, State House, Augusta, Maine.

### University of Southern California School of Medicine Second Annual Postgraduate Refresher Course

The University of Southern California School of Medicine will offer its second annual Postgraduate Refresher Course in Honolulu, Hawaii, and on board the SS Lurline from July 29 through August 15, 1959. Travel brochures and brochure describing the curriculum may be obtained from Phil R. Manning, M. D., Associate Dean, Director — Postgraduate Division, University of California School of Medicine, 2025 Zonal Ave., Los Angeles 33, California.

### Tuberculosis Conference

The 55th Annual Meeting of the National Tuberculosis Association, 54th Annual Meeting, American Trudeau Society, and the 47th Annual Meeting of the National Conference of Tuberculosis Workers will be held jointly at the Palmer House in Chicago, Illinois May 24 through 29, 1959. Registration will begin on Saturday, May 23.

Ida, who marked the occasion with a dinner party for friends and neighbors.

Dr. Theo Swinyar of Benton has announced his acceptance of a surgical residency at the Veterans Administration Hospital in Little Rock, and will take up his duties there on July 1. Dr. Swinyar came to Benton in 1952 and served as the first Chief of Staff at the Benton Saline Memorial Hospital after it opened in 1955.

The 1959 Spa Committee appointed by Dr. George Fotioo, president of the Garland County Medical Society, is composed of Drs. Francis Scully, Euclid Smith, Robert McCrary, Jack Wright, George Coffey, Martin Eisele, and King Wade, Jr. The project of the year is to prepare a booklet regarding the thermal waters and their uses in health and disease to be used in publicizing the resort area.

Dr. James Post of Fort Smith was guest speaker at the February meeting of the Fort Smith District Nurses Association. His subject was "Cystic Fibrosis".

Attending a two-day conference on February 25 and 26 in New Orleans of the National Foundation (formerly for Infantile Paralysis) were Dr. Vance J. Crain, of Wynne, Dr. Fred Gordy, Jr., of Conway, Dr. C. E. Crawley, of Forrest City, Dr. L. H. McDaniel, of Tyronza, and Dr. H. E. Hyder, of Morrilton, each representing his County Chapter of the Foundation. The meeting brought together some 250 representatives of 11 southern states for discussions on arthritis and birth defects.

Dr. T. Duel Brown, of Little Rock, was guest speaker at a meeting of the Greene County Medical Society in Springfield, Mo., on March 4. Dr. Brown delivered a paper on hypnotism and its applications in medicine and dentistry.

Dr. H. Fay H. Jones and Dr. Robert M. Eubanks returned March 10 from a two weeks' Seminar Cruise aboard the M. S. Italia to the Islands of the West Indies, the Seminar Cruise being sponsored by the

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## PERSONALS AND NEWS ITEMS

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Dr. C. G. Swingle, of Marked Tree, and Dr. C. G. Pearce, of Heber Springs, were among the 1,000 physicians from a seven-state area attending the Mid-South Postgraduate Medical Assembly in Memphis February 10 through 13. Dr. Swingle was elected a vice-president of the Assembly.

Celebrating his 79th birthday on February 8 was Dr. G. E. Watkins, of Mt.

New York University College of Medicine. In San Juan, Puerto Rico they attended a Sectional Meeting of the American College of Surgeons. Mrs. Jones and Mrs. Eubanks accompanied the doctors. Before sailing from New York they spent a week seeing the latest Broadway shows.

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## *Proceedings of Societies*

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The Craighead-Poinsett Medical Society met in dinner session February 4 at the Hotel Noble in Jonesboro. The speaker for the evening was Dr. Phil Orpet, Assistant Professor of Medicine, University of Tennessee, whose subject was "Management of Coronary Artery Disease".

The Lee County Medical Society met February 19 at the Lee Memorial Hospital in Marianna. Dr. W. H. Hatfield, a Memphis Pediatrician, discussed "Jaundice in the Newborn".

The Ouachita County Medical Society met Tuesday, March 3, at the Camden Hotel with Drs. J. B. Jameson and L. V. Ozment as hosts. Dr. Walter W. McCook, of Shreveport, Louisiana, spoke on "Tumors of the Mediastinum and Chest", and Dr. Herb Tucker, also of Shreveport, spoke on "Angiocardiography".

Mr. Horace Cotton, president and executive director of Professional Management magazine at Southern Pines, N. C., spoke on physician's problems and their solutions at the meeting of the Pulaski County Medical Society held on March 3 at the University of Arkansas Medical Center.

## **New Members . . .**

A new member of the Sebastian County Medical Society is Dr. M. Delmar Edwards, a general practitioner with offices located at 1323 North Ninth Street, Fort Smith. Dr. Edwards is a native of Fort Smith and a graduate of the University of Arkansas School of Medicine (1957).

His internship was at the Kate Bitting Reynolds Memorial Hospital, Winston-Salem, North Carolina.

Also accepted for membership in the Sebastian County Medical Society was Dr. Stanley R. McEwen. An ophthalmologist, Dr. McEwen is associated in practice with Drs. Moulton and Lane, 1214 North "B" Street, Fort Smith. His M.D. degree was received from the University of Kansas Medical Center in 1950, where he also served a residency in ophthalmology. Dr. McEwen has served two years with the Navy Medical Corps.

A new member of the Sevier County Medical Society is Doctor James J. Greenhaw. Dr. Greenhaw was born in Snowball, Arkansas, his M.D. degree was received from the University of Arkansas School of Medicine in 1956. Dr. Greenhaw is a General Practitioner in DeQueen, Arkansas.

Dr. George D. Pollock has been in practice in Gillett six months. A native of Valdosta, Georgia, Dr. Pollock received his preliminary education at the Blytheville, Arkansas, High School and Washington University at St. Louis, Missouri. His M. D. degree was obtained at the University of Arkansas School of Medicine in 1955, and he interned at Crawford W. Long Memorial Hospital, Atlanta, Georgia. Dr. Pollock is a General Practitioner with his office at the Gillett Clinic.

Dr. Jimmie J. Magie is a native of England, Arkansas and received his preliminary education at Hendrix College, and the Arkansas State Teachers College, Conway, Arkansas. His M.D. degree was obtained at the University of Arkansas School of Medicine in 1957. Dr. Magie interned at St. Vincent's Infirmary, Little Rock. He is a general practitioner with his office at 425 So. Main, Stuttgart, Arkansas.

Dr. Jack L. Prichard is a native of Little Rock and his preliminary education was obtained at Hendrix College, Conway, Arkansas. He received his M.D. degree from the University of Arkansas School



## FEATURES

of Medicine in 1957. Dr. Prichard is a general practitioner, and has practiced at his present location for six months. Dr. Prichard's office address is 1206 So. Buerkle, Stuttgart, Arkansas.

Dr. John L. Wright has been accepted as a member of the Randolph County Medical Society. A native of Joplin, Missouri, he received his preliminary education at the Pocahontas Public School and the University of Arkansas, Fayetteville. Dr. Wright received his M.D. degree from the University of Arkansas School of Medicine in 1955. His office address is 113 Broadway Street, Pocahontas, Arkansas.

## *Woman's Auxiliary*

The Women's Auxiliary to the Garland County Medical Society held the February meeting in the home of Mrs. John Dodson, with Mrs. James Leathman and Mrs. Fred Reed as co-hostesses. Mrs. Willard Creason, guest speaker, presented a talk on "Safety".

Sebastian County Medical Society Auxiliary members and wives of physicians stationed at Fort Chaffee entertained at a Doctors' Day dinner party honoring their husbands Tuesday, February 24, at Hardscrabble Country Club in Fort Smith. Members of the dinner committee were Mrs. J. S. Southard, chairman, Mrs. Cecil Boulden, Mrs. Roger Bost, and Mrs. Bob Thompson. Entertainment for the evening was sponsored by wives of Fort Chaffee medical officers.

## Book Reviews

**OFFICE GASTROENTEROLOGY.** Albert F. R. Andresen, M. D. W. B. Saunders Co., Philadelphia, London. Pages 707. January 2, 1958. \$14.00.

In his preface to the book, Dr. Andresen states that he has intended his book to be smaller than Dr. Bockus' three volume book on gastroenterology and he also hoped that it would bring authoritative new information in the field of gastroenterology to the medical public; the author has succeeded on both scores. This 707 page book is about as

concise as one could write a text on gastroenterology and still have it cover the field. This book is well written and reasonably complete. There is a section on each major segment of the gastrointestinal tract, as the stomach, small intestine, colon, liver, biliary tree and pancreas. It should certainly serve its purpose as a useful textbook on office gastroenterology. For a more exhaustive review of the diseases covered, the reader would have to refer to a longer text as the above mentioned one of Dr. Bockus. This book is recommended to medical students and the general physician. AK

**CLINICAL HEART DISEASE.** Samuel A. Levine, M.D. Fifth Edition. W. B. Saunders Co., Philadelphia, London. Pages 673. January 2, 1958. \$9.50.

This textbook of cardiology is now in its fifth edition. Its popularity stems from two factors: its authoritative information and its exceptional readability. This book reflects Dr. Levine's long experience in the field of cardiology. It reflects the meticulous observations of a wise physician rather than being an encyclopedic textbook. No references to the literature are used; this reviewer would prefer to see them. The section on hypertensive cardiovascular disease is rather brief and there is very little detailed information on the therapy of hypertension; it would seem worthwhile in view of the unusual progress and activity in this area to have included some additional information here. The section on clinical electrocardiography was written by Dr. Harold Levine and is complete within its special limitations.

This book is heartily recommended to the medical student and practicing physician. AK

**SURGERY IN WORLD WAR II.** Ophthalmology and Otolaryngology. John Boyd Coates, Jr. M.C. Editor. From the office of the Surgeon General U.S. Army. Illustrated. Pp. 605. U.S. Government Printing Office. 1957. \$5.00.

This report includes not only the historical side of the Army Medical Department's function and accomplishment during World War II, but also contains much information useful in catastrophic medicine from any cause. The general handling of patients with emphasis on their clinical needs is presented. The steps reached, both by considered design and by trial and error, are presented, which will serve as a guide for any emergency which presents injuries of the eye and ear. There is considerable definitive treatment for the clinician.

The accomplishments in restorative function and in cosmetic results are reported. These accomplishments were spectacular especially in Ophthalmology. One remembers the old saying that medicine is the only winner in any war.

The text is concise, clear, and expertly edited. There are several illustrations and charts which add to its usefulness. It is well indexed, and attractively bound for its inclusion in the series of historical reports of which it is a valuable member.

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# TUBERCULOSIS ABSTRACTS

Sponsored by  
The Arkansas Tuberculosis Association

## Chronic Pulmonary Diseases In Patients With Lung Cancer

By Walter Finke, M.D.,  
New York State Journal of Medicine,  
December 1, 1958

*An intimate relationship between nonmalignant and malignant pathology in the lungs is suggested by an investigation of the clinical history of a hundred cases of lung cancer.*

Pulmonary pathology, such as pneumonia, atelectasis, or tuberculosis, often masks the presence of a lung cancer and creates diagnostic difficulties. The question arises whether such pathologic changes are secondary complications, are merely coexistent, or have preceded the carcinoma. The prevalent view is that usually lung cancer develops in a previously healthy organ, and that in general nonmalignant pathology is due to the new growth or is coincidental.

However, judging from case histories as well as roentgenologic and pathologic findings, chronic lung processes antedate a cancer in many cases. This suggests that an intimate relationship between nonmalignant pulmonary pathology may exist in the lungs.

Clinical investigations on a possible link between common nonoccupational lung diseases and pulmonary cancer have been few and inconclusive. Still, in some series of patients with lung cancer previous chest ailments were prevalent, and follow-up statistics indicate an increased risk of respiratory cancer in persons with chronic bronchitis. It is commonly reported that many patients with lung cancer have had a long history of chronic cough. Whether this symptom is considered insignificant, or is labeled "smoker's cough," it usually signalizes some respiratory disorder.

These considerations gave rise to the clinicoroentgenologic study reported here, which attempted to determine retrospectively the amount of important pre-existing respiratory sickness in a group of patients with lung cancer.

## METHODS OF INVESTIGATION

The basic material for this investigation was the records of 100 unselected patients with proved primary lung cancer of any histologic type who had been admitted to The Genesee Hospital during the past 15 years. The routine histories proved to be inadequate so records of previous admissions were reviewed. Additional information was sought from the patients, their families, physicians, and institutions which had knowledge of the case. Only acute respiratory illnesses which had occurred at least ten years prior to the diagnosis of lung cancer were included in the final analysis. Similarly, only chronic pulmonary disorders that had existed at least ten years were considered significant.

A reasonably accurate picture of the previous respiratory status could be reconstructed for 86 of the 100 patients. In addition to this clinical information, a roentgenologic history of 63 of the 86 patients was obtained.

## CHRONIC RESPIRATORY DISEASES

—Over 90 per cent of the 86 patients whose previous respiratory health could be reinvestigated had had a chronic cough for at least ten years and in most cases for twenty years. As a rule, the cough was productive or, if "dry," associated with dyspnea or "asthma."

Frequency of Chronic Pulmonary Disease of Ten Years' Duration or More in 86 Patients With Lung Cancer

Chronic Respiratory Disease	Number of Cases
Chronic bronchitis (moderate or very severe)	56
with chronic asthma	22
observed for tuberculosis	29
Chronic pulmonary tuberculosis	6
Silicosis or sequela to gas poisoning in World War I	3
TOTAL	65

Most of these patients had required frequent medical care for years. Many had been disabled repeatedly, and some had become pulmonary cripples long before the malignant disease supervened. Thus, the illness that proved to be lung cancer often seemed at first an aggravation of an old



chest ailment rather than a new and different disease.

### ACUTE RESPIRATORY ILLNESSES

—A history of frequent respiratory episodes was found in over 80 per cent of the investigated patients with lung cancer. Forty per cent had suffered an almost fatal respiratory sickness in childhood, severe pleurisy, or major chest injuries with pulmonary complications. The most frequent of these illnesses was influenza or pneumonia during the epidemic of 1918-1920 and pneumonia at some other time in the patient's earlier life.

For tentative comparison 86 individuals hospitalized between 1955 and 1957 for various nonmalignant surgical and medical conditions were selected to match the study group as closely as possible in age distribution. They were questioned thoroughly about chronic pulmonary diseases of at least ten years' duration, influenza in 1918-20, and pneumonia at some other time at least ten years prior to their admission. Fully developed bronchitis, which had existed in 65 per cent of the group with lung cancer, was found in 30 per cent of the controls. Similar differences were found also with regard to suspected or proved tuberculosis. Among the patients with pulmonary malignancy the number of those who had influenza in 1918-1920 was twice that among the controls. Multiple episodes of severe pulmonary illness has occurred in 50% of the patients with cancer but in only 19% of the control group.

Current research on the cause of lung cancer concentrates on extrinsic carcinogens in cigarette smoke and air pollution. These studies tend to overshadow others which support anew the older view that tuberculosis and other lung diseases may predispose to pulmonary malignancy. Early cancer in the walls of old bronchiectases, near tuberculous and other scars and in areas of chronic inflammation is being reported frequently. The findings of a multicentric origin of lung cancer and of cancer in situ beside an invasive tumor indicate that generalized pulmonary inflammation can pave the way for bronchogenic

carcinoma. These investigations add weight to the concept of a profound cell injury as a cause of the malignant transformation. Severe lung insults of any type merely initiate or further those pathologic changes which produce continuous tissue unrest and disorganized proliferation. The neoplasm may not arise where macroscopically the lung had seemed most damaged. Various factors have been suspected as causes for the present "pandemic of lung cancer." The theory which points toward the pandemic of 1918-1920, may well explain why lung cancer rose sharply following the epidemic and why in recent years a substantial increase is noticeable only in the older age group.

In other organs chronic inflammation is widely recognized as potentially malignant. It is, then, conceivable that similar pathologic processes have some part in the genesis of malignant diseased lungs also.

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### Answer to What Is Your Diagnosis?

#### ANATOMY AND DIAGNOSIS: RIGHT KIDNEY-ADENOCARCINOMA.

Age, 64; race, W; sex, M.

**CLINICAL DATA:** 8/57. This patient had right CVA pain, tenderness with radiation to the inguinal area and supposedly a stone which was followed by chills and fever with hematuria. He was chronically ill but in no acute distress.

**LAB DATA:** Urinalysis revealed a 3+ protein with red blood cells too numerous to count and occasional white cells. Hgb 9.9gm %.

**SURGERY:** Under general anesthesia a right nephrectomy was done on 12/30/57.

**PATHOLOGY:** Pathological report proved the kidney to be adenocarcinoma.

**X-RAY FEATURES:** 12/27/57 Retrograde pyelogram: Polypoid tumor of the lower pole of the right kidney pelvis.

\*University of Arkansas Medical Center Department of Radiology.

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# FEATURES

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(O) Original Article: (SP) Special Article:  
(E) Editorial: (OB) Obituary: (R) Resolution.

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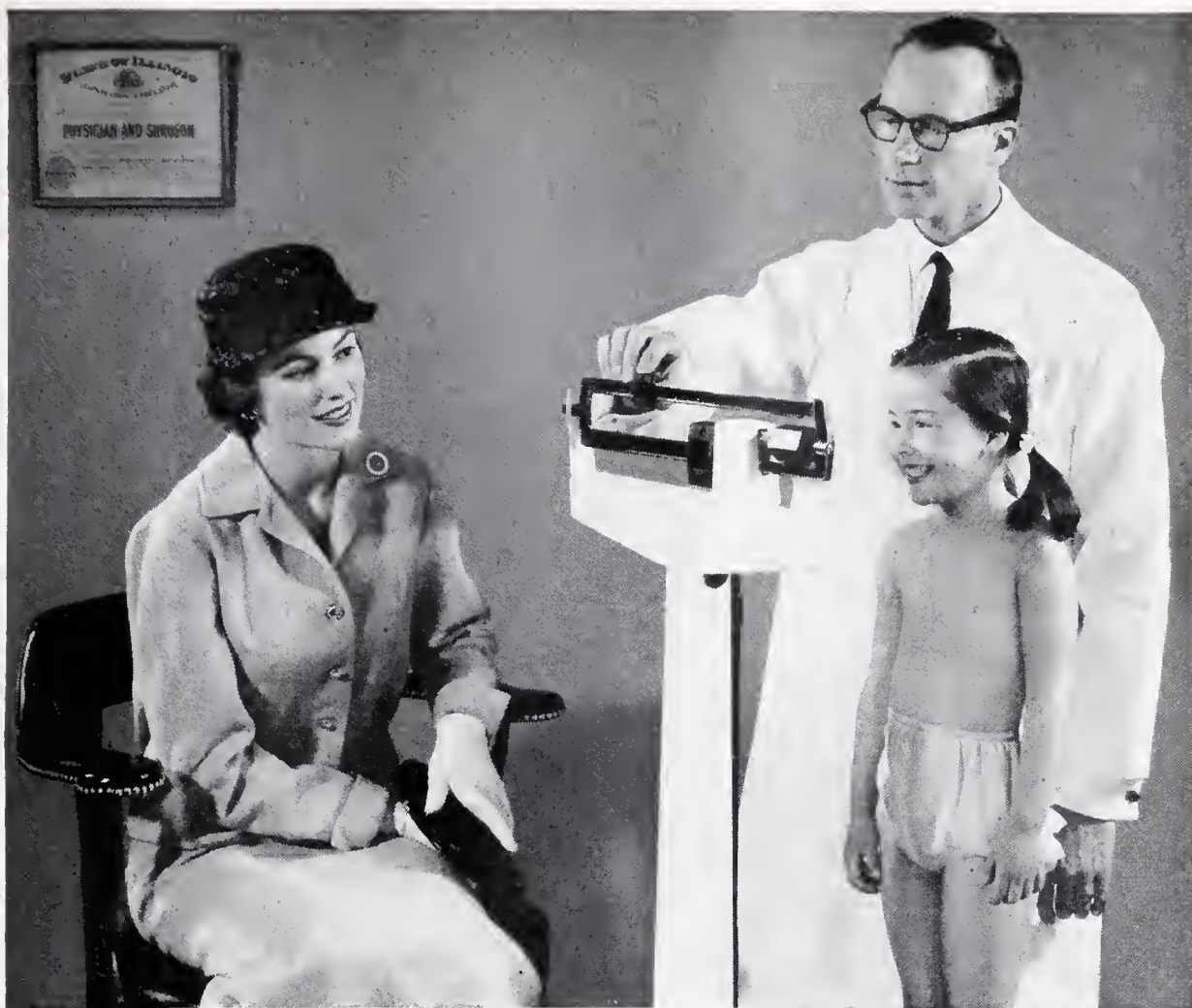
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## Underweight Children Gain and Retain Weight with Nilevar<sup>®</sup>

One of the most convincing evidences of the anabolic activity of Nilevar, brand of norethandrolone, has been its ability to improve appetite and increase weight in poorly nourished, underweight children.

A highly important feature of the weight gain thus produced is that it is not ordinarily manifested by deposition of fat but as muscle tissue resulting from the protein anabolism induced by Nilevar.

**Anorexia and "Weight Lag" Study**—Brown, Libo and Nussbaum have reported\* consistent and definite increases in rate of weight gain in eighty-six patients, ranging in age from 7 weeks to 15½ years. This beneficial action of Nilevar was observed in the patients with organic and traumatic disorders as well as those whose only complaints were poor appetite and/or persistent failure to gain weight.

In this study, the weight gained was not lost

after discontinuance of Nilevar therapy although many patients did not continue the sharp gains effected by the drug.

The authors are of the opinion that Nilevar is a highly useful anabolic agent for influencing weight gain in underweight children.

When Nilevar is administered to children a dose of 0.25 mg. per pound of body weight is recommended and continuous dosage for more than three months is not recommended.

Nilevar is supplied as tablets of 10 mg., drops of 0.25 mg. per drop and ampuls of 25 mg. in 1 cc. of aqueous solution. Further dosage information in Searle Reference Manual No. 4.

G. D. Searle & Co., Chicago 80, Illinois.  
Research in the Service of Medicine.

\*Brown, S. S.; Libo, H. W., and Nussbaum, A. H.: Norethandrolone in the Successful Management of Anorexia and "Weight Lag" in Children, Scientific Exhibit presented at the Annual Meeting of the American Academy of Pediatrics, Chicago, Oct. 20-23, 1958.

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